BLAUPUNKT
BOSCH Gruppe

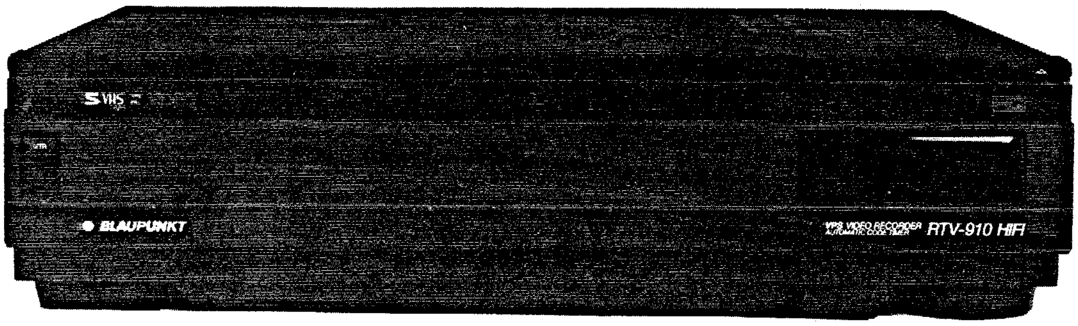
HiFi Video Recorder
RTV-910 EGC/ECV
7 618 702/703

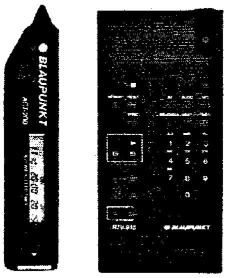
Automatic Code Timer
ACT-200
7 618 773

Kundendienstschrift · Service Manual

Ⓓ **Btx** ✻ 303 968 #

S-VHS 625 VHS PAL HQ





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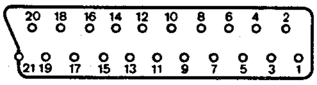
MC1/VKD 1D88 420 034

Technische Daten

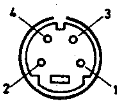
Typ:	**RTV-910 EGC/ECV**
Netzanschluß:	220 V Wechselspannung, 50/60 Hz
Leistungsaufnahme:	ca. 34 Watt
Fernsehsystem:	CCIR: 625 Zeilen, 50 Halbbilder RTV-910 EGC = PAL und SECAM-(Ost)-Farbsignal, Kabeltuner RTV-910 ECV = PAL-Farbsignal, Kabeltuner
Video-Aufnahmesystem:	Schrägspuraufzeichnung S-VHS + VHS (mit Superstandbild)
Tonspuren:	1 Normal-Spur (Mono), 2 Schrägspuren (HiFi): Zweikanal/Stereo
Bandgeschwindigkeit:	SP: 23,39 mm/s LP: 11,695 mm/s
Bandformat:	S-VHS + VHS -Videokassette
Aufnahme/Wiedergabezeit:	SP: S-VHS: 180 min. mit SE 180/VHS: 240 min. mit M-E 240 LP: S-VHS: 360 min. mit SE 180/ VHS: 480 min. mit M-E 240
Vorspul-Rückspul-Zeit:	Weniger als 5,5 min. mit SE 180/M-E 180
Köpfe:	Video: 4 rotierende Köpfe, 2 Köpfe für SP und Sonderfunktionen, 2 Köpfe für LP und Sonderfunktionen. Audio: 2 rotierende Köpfe für HiFi Audio/Sync: 1 Kopf Löschen: 1 rotierenden Löschkopf 1 Ganzspur-Löschkopf 1 Tonspur-Löschkopf
Video-Eingangspegel:	VIDEO-IN-Buchse/ Euro-AV-Buchse 1,0 V_{ss}, 75 Ω S-VHS-Buchse Y: 1,0 V_{ss}, 75 Ω C: 0,6 V_{ss}, 75 Ω
Video-Ausgangspegel:	VIDEO-OUT-Buchse/ Euro-AV-Buchse 1,0 V_{ss}, 75 Ω S-VHS-Buchse Y: 1,0 V_{ss}, 75 Ω C: 0,6 V_{ss}, 75 Ω HF-Konverter UHF Kanal 36 (±4),75 Ω
Audio-Eingangspegel:	2 x LINE-IN-Buchse – 10 dBV ≥ 50 kΩ Euro-AV-Buchse – 10 dBV ≥ 10 kΩ MIC IN-Buchse – 70 dBV niederohmig
Audio-Ausgangspegel:	2 x LINE OUT-Buchse – 8 dBV≥ 1 kΩ Euro-AV-Buchse – 6 dBV ≥ 1 kΩ Kopfhörer-Buchse (PHONES) – 30 dBV ≥ 8 Ω
Horizontale Videoauflösung:	VHS: bei Farbe größer als 240 Zeilen S-VHS: bei Farbe größer als 400 Zeilen
Signal-Störabstand:	VHS: Video; besser als 43 dB S-VHS: Video; besser als 46 dB
Dynamikbereich:	Audio; besser als 90 dB (HiFi-Tonspur)
Tonfrequenzgang:	20 Hz bis 20kHz (HiFi-Tonspur)
Gleichlaufschwankungen:	0,005% (HiFi-Tonspur)
Betriebstemperatur:	5°C – 40°C
Betriebs-Luftfeuchtigkeit:	35% – 80%
Masse:	ca. 7,1 kg
Abmesungen:	ca. 430 (B) x 109,5 (H) x 358 (T) mm

Belegung der Euro-AV-Buchse:



1 Audio-Ausgang CH 2 (R)
2 Audio-Eingang CH 2 (R)
3 Audio-Ausgang CH 1 (L)
4 Audio Masse
5 frei
6 Audio-Eingang CH 1 (L)
7 frei
8 Schaltspannung
9 frei
10 frei
11 frei
12 frei
13 frei
14 frei
15 frei
16 frei
17 Video-Masse
18 frei
19 Video-Ausgang
20 Video-Eingang
21 Masse

Belegung der S-VHS-Buchsen (IN und OUT)



1 Masse
2 Masse
3 Luminanz-Signal
4 Farb-Signal

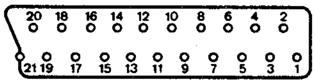
Mitgeliefertes Zubehör:

1 Infrarot-Fernbedienung
1 Antennenkabel
1 Strichcode-Lesestift (ACT-200) kompl.
2 Audiokabel (Cinch)
1 Netzkabel
1 S-VHS-Kabel
1 S-VHS-Cassette SE 60

Specifications

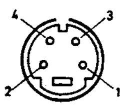
Type:	**RTV-910 EGC/ECV**
Power Source:	220 V AC 50/60 Hz
Power Consumption:	Approx. 34 watts
Television System:	CCIR: 625 lines, 50 fields RTV-910 EGC = PAL/SECAM-(East)-colour signal, cable tuner RTV-910 ECV = PAL-colour signal cable tuner
Video Recording System:	Recording by helical scanning S-VHS + VHS (with super still)
Audio Tracks:	1 track (Normal), 2 helical tracks (2 channels HiFi). Stereo/Bilingual
Tape Speed:	SP: 23.39 mm/s LP: 11.695 mm/s
Tape Format:	S-VHS + VHS Video Cassette Tape
Record/Playback Time:	SP: S-VHS: 180 min with SE 180/VHS: 240 min. with M-E 240 LP: S-VHS: 360 min. with SE 180/ VHS: 480 min. with M-E 240
FF/REW Time:	Less than 5.5 min. with SE 180/M-E 180
Heads:	Video: 4 rotary heads. 1 pair for SP and trick play, 1 pair for LP and trick play. Audio: 2 rotary heads for audio HiFi recording and playback. Audio/Sync.: 1 head Erase: 1 rotary erase head 1 full track erase head 1 audio track erase head Output Level S-VHS
Video Input Level:	VIDEO IN and Euro-AV Socket 1.0 $V_{p\text{-}p}$, 75 Ω S-VHS Socket Y: 1.0 $V_{p\text{-}p}$, 75 Ω C: 0,6 $V_{p\text{-}p}$, 75 Ω
Video Output Level:	VIDEO OUT and Euro-AV Socket 1.0 $V_{p\text{-}p}$, 75 Ω S-VHS Socket Y: 1.0 $V_{p\text{-}p}$, 75 Ω C: 0,6 $V_{p\text{-}p}$, 75 Ω RF-Modulator UHF channel 36 (±4), 75 Ω
Audio Input Level:	2 x LINE IN – 10 dBV ≥ 50 kΩ Euro-AV Socket – 10 dBV ≥ 10 kΩ MIC IN Socket – 70 dBV low impedance
Audio Output Level:	2 x LINE OUT – 8 dBV ≥ 1 kΩ Euro-AV Socket – 6 dBV ≥ 1 kΩ Headphones – 30 dBV ≥ 8 Ω
Video Horizontale Resolution:	VHS: Colour; more than 240 lines S-VHS: Colour; more than 400 lines
Signal-to-Noise Ratio:	VHS: Video; more than 43 dB S-VHS: Video; more than 46 dB
Dynamic Range:	Audio; more than 90 dB (HiFi sound track)
Audio Frequency Response:	20 Hz – 20 kHz (HiFi sound track)
Wow and Flutter:	0,005% (HiFi sound track)
Operating Temperature:	5°C – 40°C
Operating Humidity:	35% – 80%
Weight:	Approx. 7,1 kg
Dimensions:	430 (W) x 109,5 (H) x 358 (D) mm

Connections of the Euro-AV Socket:



1 Audio Output CH 2 (R)
2 Audio Input CH 2 (R)
3 Audio Output CH 1 (L)
4 Audio Ground
5 No connection
6 Audio Input CH 1 (L)
7 No connection
8 Switching voltage
9 No connection
10 No connection
11 No connection
12 No connection
13 No connection
14 No connection
15 No connection
16 No connection
17 Video Ground
18 No connection
19 Video Output
20 Video Input
21 Ground

Connections of the S-VHS Sockets (IN and OUT)



1 Ground
2 Ground
3 Luminance Signal
4 Chrominance Signal

Standard Accessories:

1 pc. Infrared remote control unit
1 pc. RF cable
1 pc. Automatic Code Timer (ACT-200) compl.
2 pcs. Audio cable (Cinch)
1 pc. AC cord
1 pc. S-VHS cable
1 pc. S-VHS Cassette SE 60

Einstellung der Bildsynchronisation bei „Standbild“

1. Eine Sendung aufnehmen (ca. 5 Minuten in SP und LP).
2. Die aufgezeichnete Sendung wiedergeben. Kontrollieren, ob sich die Einsteller „TRACKING“ und „SLOW TRACKING“ in der Raststellung befinden.
3. Die Taste **II** (Pause) drücken.
4. Mit dem Regler „V-LOCK“ (je ein Regler für SP und LP) an der Unterseite des Gerätes das Bildzittern auf Minimun einstellen.

Adjustment of Picture Synchronization for “still-frame picture”

1. Record a programme (ca. 5 min. in SP mode and LP mode).
2. Playback the recorded programme and check if the adjusters “TRACKING” and “SLOW TRACKING” are in the fix position.
3. Press the “**II** Still” button.
4. Tune the jumping pictures to a minimum by means of the “V-LOCK” adjuster (in SP and LP mode) situated at the bottom of the set.

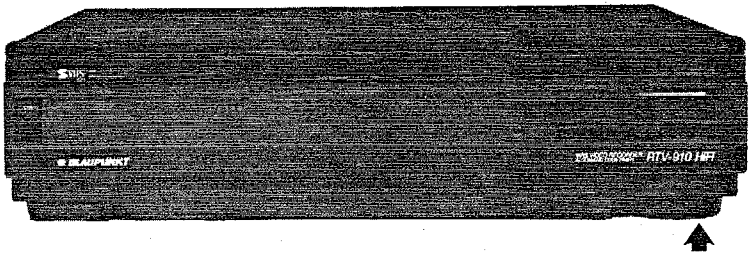


Fig. 1

Mechanische Wartung

Nachstehende Teile benötigen eine regelmäßige Reinigung, da sich mit der Zeit Bandabrieb ansammelt.
Bei Verwendung von Marken-Videokassetten sind die Reinigungsarbeiten nach ca. 500 Betriebsstunden durchzuführen. Bei Verwendung anderer Videokassetten können die Reinigungsarbeiten schon nach kürzerer Betriebszeit notwendig werden.

Reinigung der Rotationsköpfe

- Demontage der Gehäuseteile siehe „Servicevorbereitungen“ Seite 1-12.
- Ein weiches Ledertuch (Kopfreiniger 8 627 000 552) oder ein fusselfreies Tuch mit reinem Alkohol anfeuchten und mit sanftem Druck auf die Rotationsköpfe (A) halten. Nun die Kopfscheibe mit der Hand hin- und herbewegen. Diesen Vorgang wiederholen bis der Bandabrieb beseitigt ist.

Mechanical Servicing

The following parts require regular cleaning because of gradual tape abrasion. If you use brand video cassettes, cleaning has to be performed approximately after 500 working hours. If you use other video cassettes, cleaning already becomes necessary after a shorter working time.

Cleaning of rotary heads

- Disassembly of the cabinet parts, see page 1-12 “Service Preparations”.
- Moisten a soft leather cloth (head cleaner 8 627 000 552) or a lintfree cloth with pure alcohol and press it softly on the rotary heads (A). Move the upper cylinder by hand in either direction and repeat this procedure until the tape abrasion has been removed.

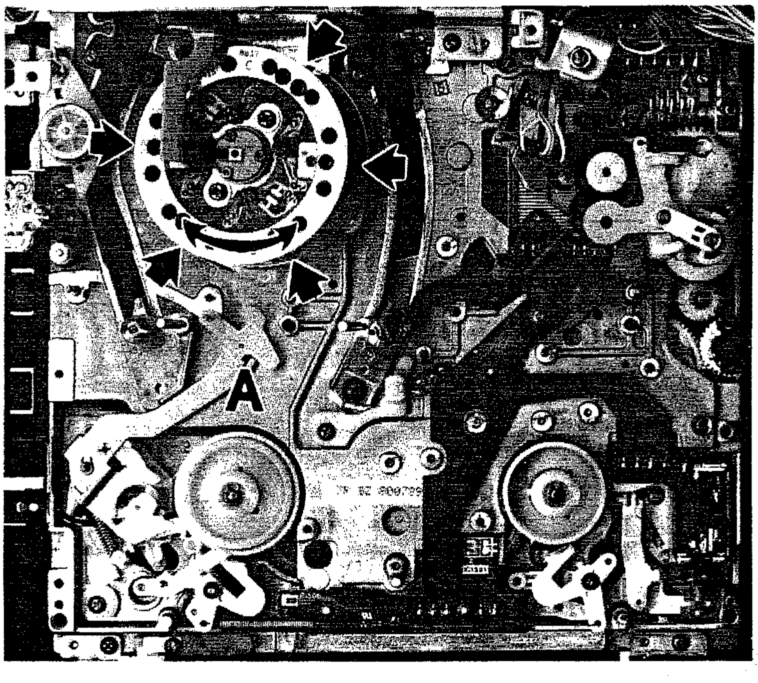


Fig. A

● **Reinigung der Löschköpfe und des Ton-Synchronkopfes**

Die Köpfe (B) sind mit einem Wattestäbchen, das mit reinem Alkohol angefeuchtet ist, zu reinigen.

● ***Cleaning of the erase head and the audio synchronous head***

The heads (B) have to be cleaned with a cotton-wool bud moistened with pure alcohol.

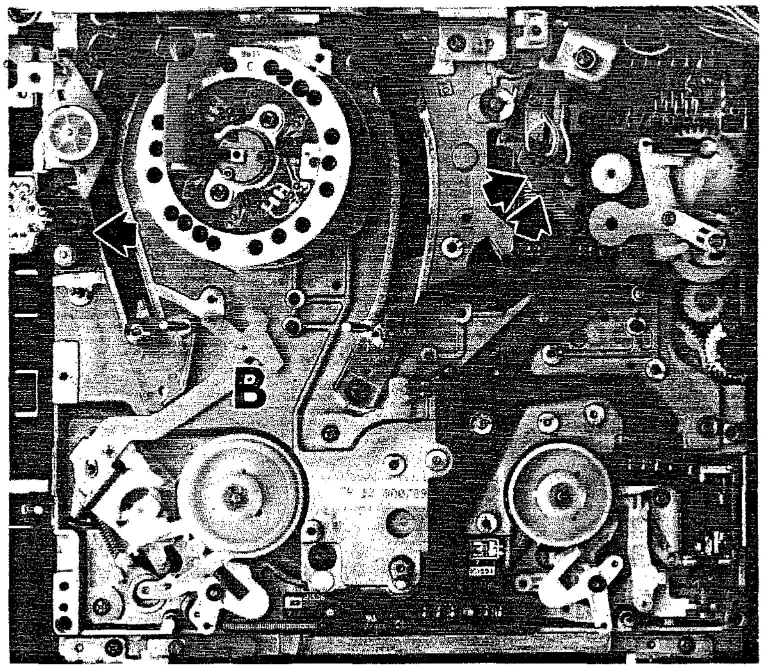


Fig. B

● **Reinigung von Führungsrollen, Andruckrolle, Capstanwelle und Bandführungen**

Diese Teile (C) sind mit einem Wattestäbchen, das mit reinem Alkohol angefeuchtet ist, zu reinigen.

● **Cleaning of the guide rollers, pressure roller, capstan shaft *and the tape sliders***

These parts (C) have to be cleaned with a cotton-wool bud moistened with pure alcohol.

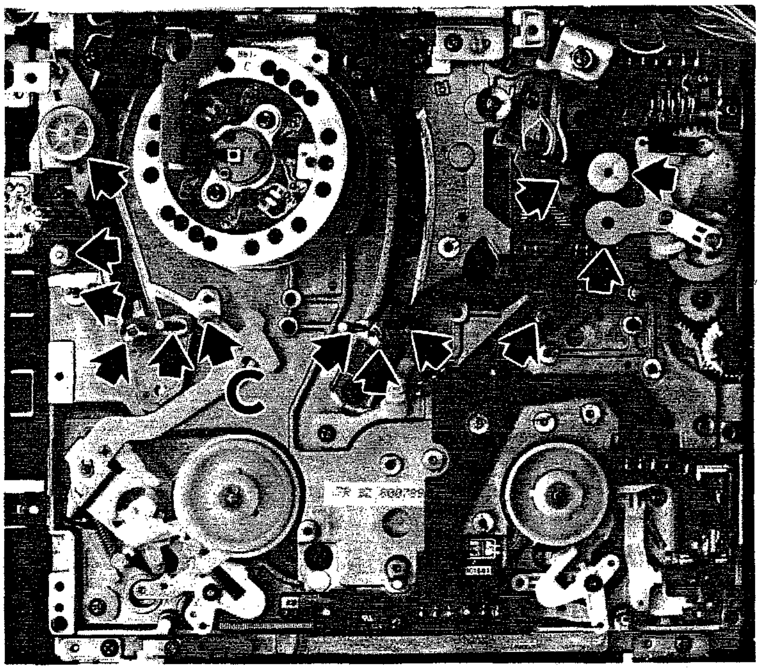


Fig. C

● Nach Beendigung der Reinigungsarbeiten die demontierten Teile wieder montieren.

Hinweise:

1. Bevor die Videokassette eingesetzt wird, müssen alle gereinigten Teile gut abgetrocknet sein, um Bandschäden zu vermeiden.
2. Antriebsriemen und Lager benötigen unter normalen Betriebsbedingungen keine Wartung.

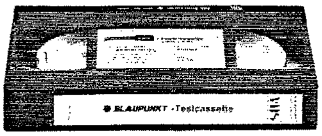
● After finishing these cleaning works reassemble all disassembled parts.

Notes:

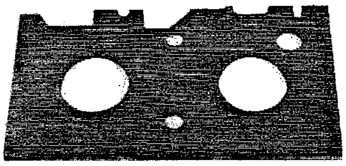
1. Before the video cassette can be inserted all cleaned parts have to be completely dry in order to avoid tape defects.
2. Drive belts and bearings to not require servicing in normal working conditions.

Erforderliche Meßgeräte, Schablonen und Spezialwerkzeuge
Required Servicing Fixtures, Jigs and Special Tools

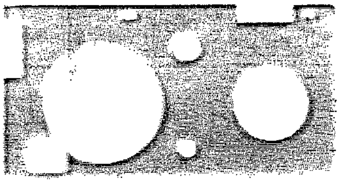
8 627 000 540 VHS-Testcassette
VHS Alignment Tape



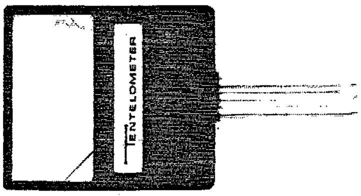
8 627 000 725 Einstellplatte
Post Adjustment Plate



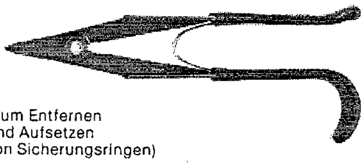
8 627 105 147 Referenzplatte
Tension Post Adj. Fixture



8 627 000 554 Bandzugwaage
Back Tension Meter

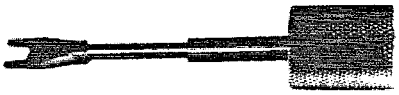


8 627 105 148 Spezialzange
Retaining Ring Remover

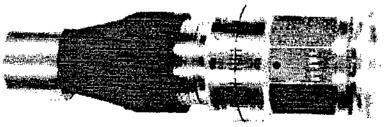


(Zum Entfernen
und Aufsetzen
von Sicherungsringen)
(For removing and inserting retaining rings)

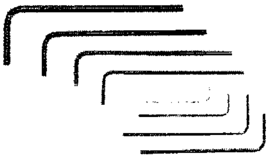
8 627 000 731 Spezial-Schraubendreher
H-Portion Screw Driver



8 627 000 541 Drehmomentmeßuhr
Dial Torque Gauge
8 627 000 586 Adapter/Adapter

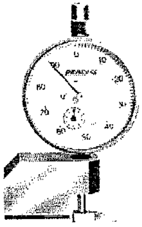


8 627 105 151 Sechskantschlüsselsatz
Hexagonal Wrench Set

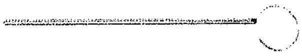


(0.7, 0.9, 1.2, 1.5,
1.6, 2, 2.4, 3 mm)

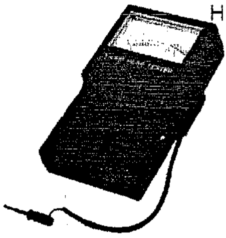
8 627 000 724 Höhenmeßuhr
Reel Table Height Gauge



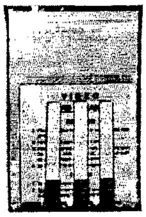
8 627 000 363 Mechanikerspiegel
Mechanics'Mirror



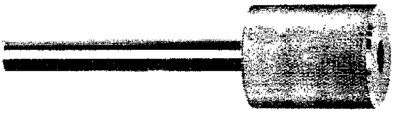
8 627 000 728 Videokopfprüfer
Head Tester



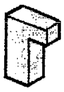
8 627 000 552 Kopfreiniger
Head Cleaning Sticks



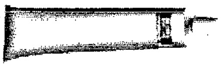
8 627 000 544
Einstell-Schraubendreher
Post Adj. Screwdriver



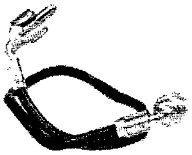
8 627 105 152 Höheneinstellehre
Height Adjustment Jig



8 627 000 315 Schmiermittel
Lubricant

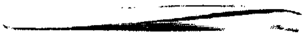


8 619 498 009
Anschlußkabel (TV-Demodulator)
Adjustment Cable (TV Demodulator)



8 627 000 364 Pinzette
Tweezers

8 627 000 737 Winkelpinzette
Angle Tweezers



Allgemeine Hinweise

1. S-VHS Format

● Aufnahme und Wiedergabe im S-VHS Format

Für Aufnahmen im S-VHS Format sollten nur S-VHS Videokassetten verwendet werden.
Die S-VHS-Videokassetten haben ein S-VHS ID-Loch (Identifikationsloch) um sie von den VHS-Bändern zu unterscheiden.

General Hints

1. S-VHS Format

● How to make the recording and playback in the S-VHS format

When making a recording in the S-VHS format, the high performance S-VHS video cassette tapes should be used.
The S-VHS video cassette tape has a S-VHS ID hole in order to distinguish between S-VHS and VHS.

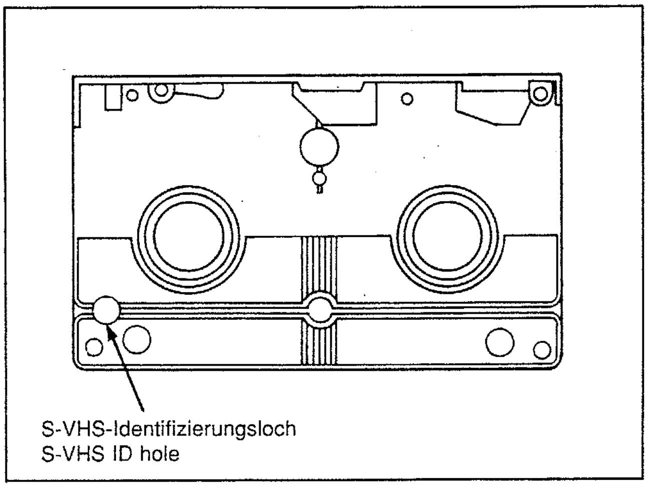

S-VHS-Identifizierungsloch
S-VHS ID hole

Fig. 1

● Anschluß an ein Fernsehgerät mit S-VHS-Buchse

Die S-Video-Ausgangsbuchse des Videorecorders mit der S-Video-Eingangsbuchse am TV-Gerät durch das S-VHS-Kabel verbinden und die Audio-Ausgangsbuchsen des Videorecorders mit den Audio-Eingangsbuchsen des TV-Gerätes verbinden. (Cinch-Kabel).

● Connection to a TV set with S-VHS Socket

Connect the S-Video output socket on the VTR with the S-Video input socket on the TV set, and the Audio output sockets on the VTR with the Audio input sockets on the TV set.

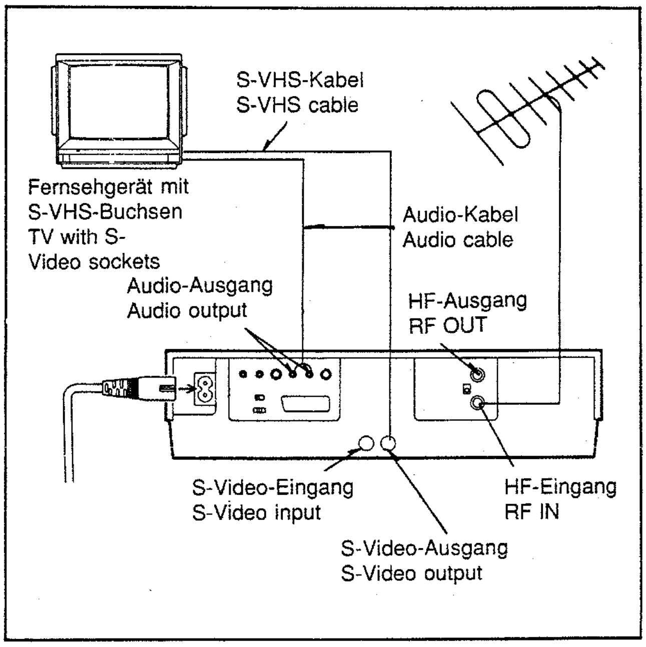

S-VHS-Kabel
S-VHS cable
Fernsehgerät mit S-VHS-Buchsen
TV with S-Video sockets
Audio-Kabel
Audio cable
Audio-Ausgang
Audio output
HF-Ausgang
RF OUT
S-Video-Eingang
S-Video input
HF-Eingang
RF IN
S-Video-Ausgang
S-Video output

Fig. 2

Hinweis:

Bei den herkömmlichen Videobuchsen der Videorecorder-(Aus/Eingänge) wurden das Luminanzsignal (Y) und das Farbsignal (C) als Gesamtsignal übertragen und auf dem Videoband aufgezeichnet. Die neue S-(separat)-Videobuchse ermöglicht die separate Übertragung dieser zwei Signale zu einem TV-Gerät (Videorecorder) mit separatem Eingang für diese Signale, um so ein schärferes Bild zu gewährleisten.

● S-VHS-Aufnahme

Den S-VHS-Wahlschalter in Stellung „AUTO" bringen und das Videosignal mit einer S-VHS-Kassette aufzeichnen (S-VHS-Mode).

Hinweis:

Wenn der S-VHS-Wahlschalter in OFF-Stellung steht, ist es möglich, im VHS-Format mit einer S-VHS-Kassette, Aufnahmen durchzuführen.

Note:

The conventional video jack of VTRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S-(Separate)-Video socket allows separate transmission of these two signals to a TV set or separate input of these two signals in order to obtain clearer picture.

● Recording of S-VHS

Set the S-VHS selector switch to "AUTO" position and record the video signal through the S-VHS circuit by using the S-VHS cassette tape.

Note:

When setting the S-VHS selector switch to OFF position, it is possible to record in the VHS format using the S-VHS cassette tape.

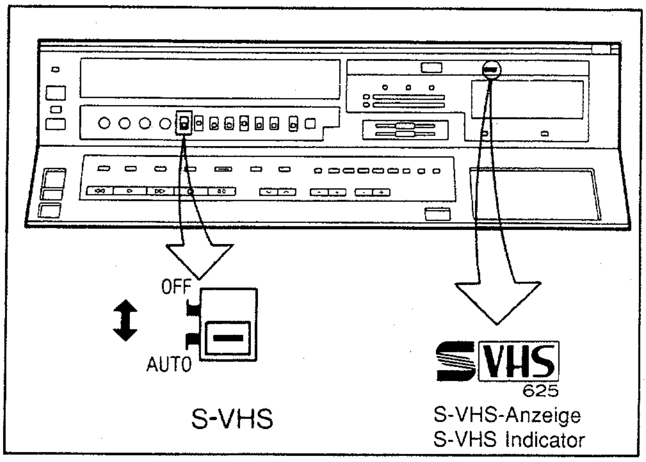
- **S-VHS- Wiedergabe**

In S-VHS aufgenommene Kassetten werden automatisch im S-VHS-Format abgespielt und in VHS aufgenommene Kassetten werden im VHS Format abgespielt. Es ist daher nicht erforderlich, den S-VHS-Wahlschalter zu betätigen. Wird ein S-VHS-Band abgespielt, das in VHS aufgenommen wurde, leuchtet die S-VHS-Anzeige nicht auf. Die Verbindung mit dem S-Videokabel kann auch für die Wiedergabe eines Bandes genutzt werden, das mit dem herkömmlichen VHS-System aufgenommen wurde. Das „S“ an den S-Video-Buchsen steht für „Separated Y/C“ und nicht für „S-VHS“.

- **Playback of S-VHS**

Cassette tapes recorded in the S-VHS format are automatically played back in the S-VHS format and tapes recorded in the VHS format are automatically played back in the VHS format.
So that it is not necessary to operate the S-VHS select switch.
When an S-VHS tape which was recorded in the VHS format is played back, the S-VHS indicator does not light up.
The connection with the S-Video cable can be used for playback of a tape that was recorded in the conventional VHS system. The “S” in the “S-Video socket” stands for “SEPARATED Y/C” not for “S-VHS”.

Hinweis:
Wird ein im S-VHS-Format aufgenommenes Band auf einem herkömmlichen VHS-Videorecorder abgespielt, so wird man ein völlig übersteuertes Bild erhalten



Note:
When a tape which was recorded in the S-VHS format is played back on a conventional VHS VTR, it is not possible to obtain playback picture.

Fig. 3

- **Kompatibilität von Videorecordern und Kassetten**

- **Compatibility of VTR and Tapes**

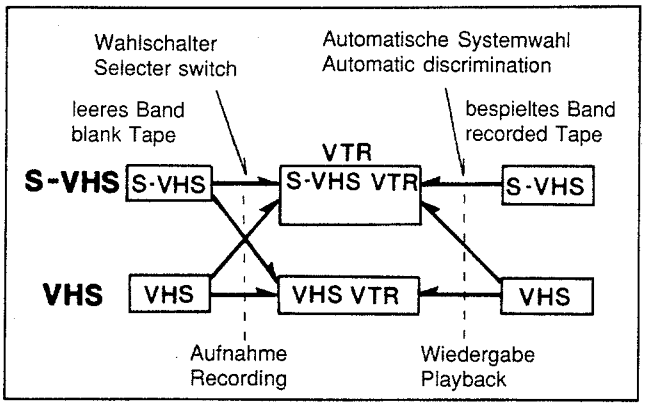


Fig. 4

Bei der Aufnahme
During recording

Recorder-Typ Video deck / Kassette Video tape	S-VHS video	VHS video
S-VHS tape	S-VHS-Mode (automatisch) S-VHS mode (automatically)	VHS mode
VHS tape	VHS mode	VHS mode

Fig. 5

Bei der Wiedergabe
During Playback

Recorder-Typ Video deck / Kassette Video tape	S-VHS video	VHS video
S-VHS-Kassette mit S-VHS-Aufnahme S-VHS Tape recorded in S-VHS mode	S-VHS mode	nicht möglich Not possible
S-VHS-Kassette mit VHS-Aufnahme S-VHS Tape recorded in VHS mode	VHS mode	VHS mode
VHS-Kassette mit VHS-Aufnahme VHS Tape recorded in VHS mode	VHS mode	VHS mode

Fig. 6

- **Prinzip des S-VHS (Super VHS)**

Super VHS ist entwickelt worden, um höchste Ansprüche an die Bildqualität zu befriedigen.
Das herkömmliche VHS-Format bietet eine horizontale Auflösung mit ca. 240 Zeilen. Die S-VHS-Technik hingegen erhöht diese auf über 400 Zeilen durch Anheben des Hubs der FM-Trägerfrequenz des Luminanzsignals von 3,8 MHz bis 4,8 MHz (1MHz Hub) auf 5,4 MHz bis 7,0 MHz (1,6 MHz Hub).

- **Principle of S-VHS (Super VHS)**

The super VHS (S-VHS) has been designed to satisfy the demand of high picture quality.
The conventional VHS format offers about 240 lines of horizontal resolution, however S-VHS technology increases this specification to well over 400 lines by raising the FM carrier frequency of the luminance signal from between 3.8 MHz and 4.8 MHz to between 5.4 MHz and 7.0 MHz.

Dies führt zu einer stark verbesserten Detailliertheit und Klarheit des Wiedergabe-Bildes. Eine Erhöhung des Weißpegels auf 210% verbessert die Bildqualität noch mehr und führt zu einer ausgeprägt genauen Detailwiedergabe.
Mit zunehmender Auflösung nimmt normalerweise auch das Rauschen zu. Beim S-VHS-System wird dieses Problem durch Vergrößerung der Luminanz-Signal-Bandbreite (Frequenzhub) von 1 MHz auf 1,6 MHz gelöst, wodurch der Rauschabstand verbessert wird.
Eine nicht-lineare zusätzliche Anhebung der hohen Frequenzen verringert das Rauschen weiter durch Anpassung der Anhebung an die Amplitude des ankommenden Signals, wodurch es möglich wird, die erforderliche Anhebung auch für Signale mit fein geteilten Pegeln zu finden.

The result in performance is breath-taking detail and clarity. A 210% increase in peak white level enhances the picture quality even more, and highly faithful reproduction of detail.
When resolution increases, normally noise does too, S-VHS technology solve this problem by broadening the luminance signal handwidth (frequency deviation) from 1 MHz to 1.6 MHz, thus improving the S/N ratio.
The non-linear sub-emphasis system further reduces noise by varying the emphasis according to the amplitude of the incoming signal, making it possible to apply the optimum amount of emphasis to signals of finely divided level.

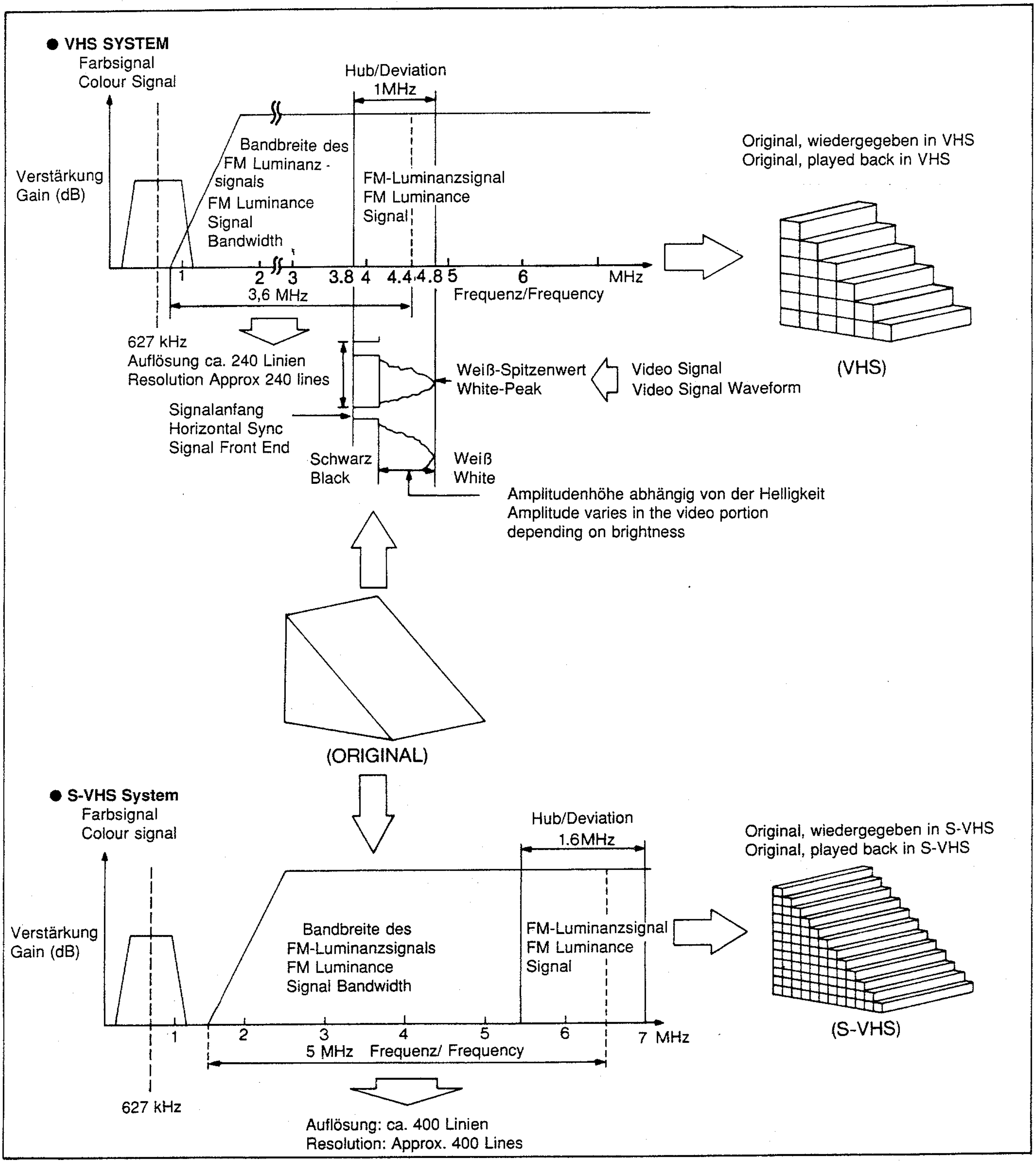

● VHS SYSTEM
Farbsignal
Colour Signal
Hub/Deviation
1MHz
Verstärkung
Gain (dB)
Bandbreite des FM Luminanz - signals
FM Luminance Signal Bandwidth
FM-Luminanzsignal
FM Luminance Signal
1
2
3
3.8
4
4.4
4.8
5
6
MHz
3,6 MHz
Frequenz/Frequency
627 kHz
Auflösung ca. 240 Linien
Resolution Approx 240 lines
Original, wiedergegeben in VHS
Original, played back in VHS
(VHS)
Weiß-Spitzenwert
White-Peak
Video Signal
Video Signal Waveform
Signalanfang
Horizontal Sync
Signal Front End
Schwarz
Black
Weiß
White
Amplitudenhöhe abhängig von der Helligkeit
Amplitude varies in the video portion depending on brightness
(ORIGINAL)
● S-VHS System
Farbsignal
Colour signal
Hub/Deviation
1.6MHz
Original, wiedergegeben in S-VHS
Original, played back in S-VHS
Verstärkung
Gain (dB)
Bandbreite des FM-Luminanzsignals
FM Luminance Signal Bandwidth
FM-Luminanzsignal
FM Luminance Signal
1
2
3
4
5
6
7 MHz
5 MHz
Frequenz/ Frequency
(S-VHS)
627 kHz
Auflösung: ca. 400 Linien
Resolution: Approx. 400 Lines

Fig. 7

2. Das neue G-Mechanik-Laufwerk

Die neue G-Mechanik bietet, aufgrund technischer Innovationen im neuen Laufwerk, folgende Vorteile:

1. Flacher Kopftrommelmotor
   Im neuen VHS-Laufwerk wird für den Kopftrommelmotor eine neue Lagerungstechnik angewendet. Der Kopftrommelmotor ist „hydrodynamisch“ gelagert. Verglichen mit den üblichen Kugellagersystemen verringert sich hierbei der Lagerabstand.
   Der flache Kopftrommelmotor benutzt als Lager einen Ölfilm. Dadurch verringert sich die Lagerreibung und 99,999% der Umdrehungsgeschwindigkeit des Motors übertragen sich auf die Kopftrommel.
2. Echtzeit-Bandlaufanzeige
   Eine große Verbesserung gegenüber den ungefähren Zählersystemen herkömmlicher Videorecorder besteht darin, daß die Echtzeit-Bandlaufanzeige eine genaue Angabe der abgelaufenen Zeit in Stunden, Minuten und Sekunden ermöglicht. Dies ist sehr nützlich zum Archivieren des Bandes und zum Kontrollieren der Länge der Aufnahmezeit.

2. New Mechanism (G-Mechanism)

Thanks to the innovation of technology for the basis of the creation of new generation, the G-Mechanism offers the following major advantages.

1. Low-Profile DD Cylinder Motor (LDD Cylinder)
   The G-Mechanism employs an oil Film Suspension System for the DD Cylinder Motor which called the Low-Profile DD Cylinder Motor with “Hydro Dynamic Bearing”.
   The LDD Cylinder compared with the usual ball bearing system, reduces bearing distance, thereby enabling thinner dimensions. This also overcomes friction problems, so that 99.999% rotational precision of the DD motor can be transferred to the cylinder.
2. Lap Time Indicator
   A vast improvement over the approximate counter systems of conventional VTRs, the Lap Time Indicator gives you an exact reading of elapsed tape time in hour, minutes and seconds. This is extremely useful for indexing particular portions of the tape during playback and controlling the length of recording time. This Lap Time Indicator System owe into success to the Intermediate Loading System.

Vergleichstabelle

Comparison Chart

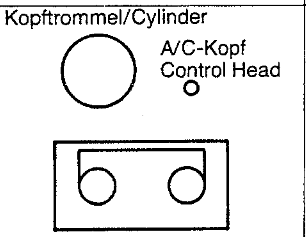
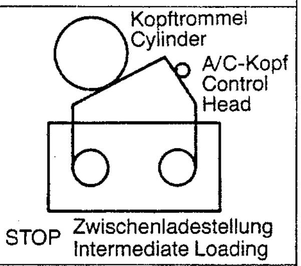
	Bisheriges Chassis Current Mechanism (D1)	Neues Chassis New Mechanism (G)
Bandtransport bei FF/REW Tape Transportation at FF/REW Mode		 Kopftrommel Cylinder A/C-Kopf Control Head STOP Zwischenladestellung Intermediate Loading
Laufzeitanzeige (Stund., Min., Sek.) Lap Time Counter (Hour, Min., Sec.)	–	×
Kopftrommel (LDD) LDD Cylinder	–	×
Capstan Motor	×	×
Kassetten-Einzugsmotor Front Loading Motor	×	–
Einfädelmotor Loading Motor	×	–
Höhe Height	73 mm	53 mm
Größenverhältnis Size	100%	87%

Fig. 8

Hinweis:
Der Capstanmotor des G-Mechanik-Laufwerkes übernimmt die Funktion des Einfädelmotors und des Kassetten-Einzugsmotors im herkömmlichen Laufwerk. Dieser Capstanmotor kontrolliert außerdem alle mechanischen Komponenten der G-Mechanik des Laufwerkes.

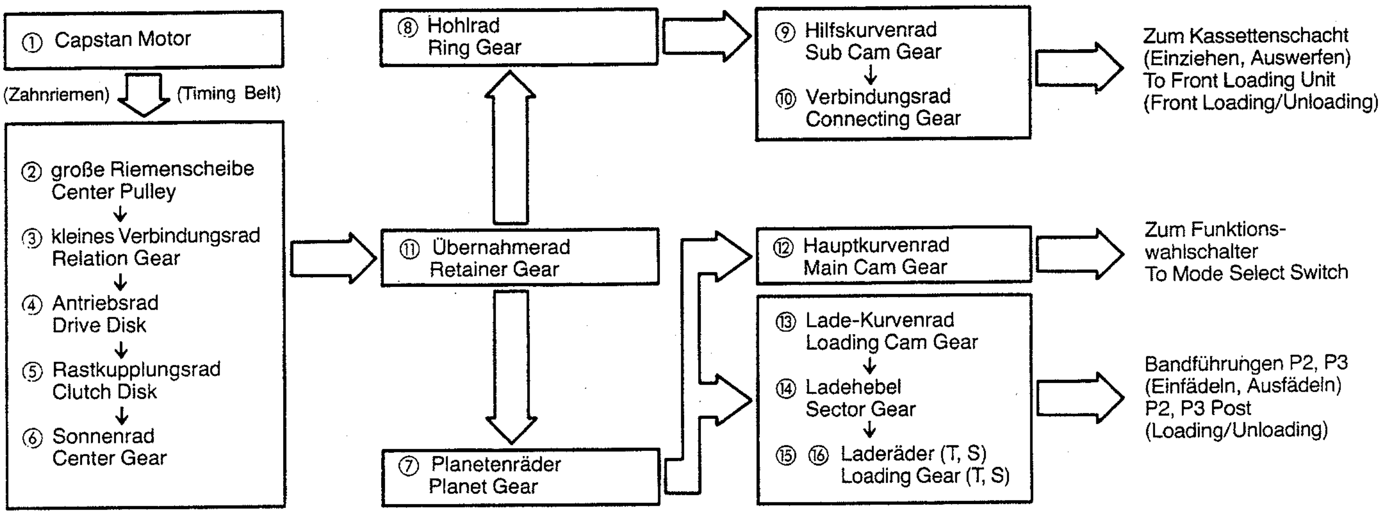
Note:
The Capstanmotor of G-Mechanism works as a loading motor and a front Loading motor in the conventional mechanism. This capstan-Motor controls all mechanical components of G-Mechanism VTR.

3. Die Funktion der G-Mechanik

Die Stellung der mechanischen Zahnräder zueinander ist sehr wichtig, wenn einzelne Teile des Laufwerks ausgewechselt werden. Dies gilt auch für das Auswechseln des Kassettenfaches.
Folgendes Flußdiagramm zeigt die mechanischen Bewegungen von der Antriebsquelle, dem Capstan-Motor, zu anderen mechanischen Hauptteilen.

3. The Function of G-Mechanism

The phase of mechanical condition becomes very important, when reinstall any components of mechanism, even if installation of the Cassette Compartment.
The mechanical movement shows the flow chart from the drive source of capstan motor to all other main mechanical components.


① Capstan Motor
(Zahnriemen)
(Timing Belt)
② große Riemenscheibe
Center Pulley
③ kleines Verbindungsrad
Relation Gear
④ Antriebsrad
Drive Disk
⑤ Rastkupplungsrad
Clutch Disk
⑥ Sonnenrad
Center Gear
⑧ Hohlrad
Ring Gear
⑪ Übernahmerad
Retainer Gear
⑦ Planetenräder
Planet Gear
⑨ Hilfskurvenrad
Sub Cam Gear
⑩ Verbindungsrad
Connecting Gear
⑫ Hauptkurvenrad
Main Cam Gear
⑬ Lade-Kurvenrad
Loading Cam Gear
⑭ Ladehebel
Sector Gear
⑮ ⑯ Laderäder (T, S)
Loading Gear (T, S)
Zum Kassettenschacht
(Einziehen, Auswerfen)
To Front Loading Unit
(Front Loading/Unloading)
Zum Funktions-wahlschalter
To Mode Select Switch
Bandführungen P2, P3
(Einfädeln, Ausfädeln)
P2, P3 Post
(Loading/Unloading)

Mit Hilfe des Sperrhebels werden die Funktionen Kassetteneinzug und Einfädeln gesteuert.
Switching of Loading and Front Loading is performed by Detent Arm.

Fig. 9

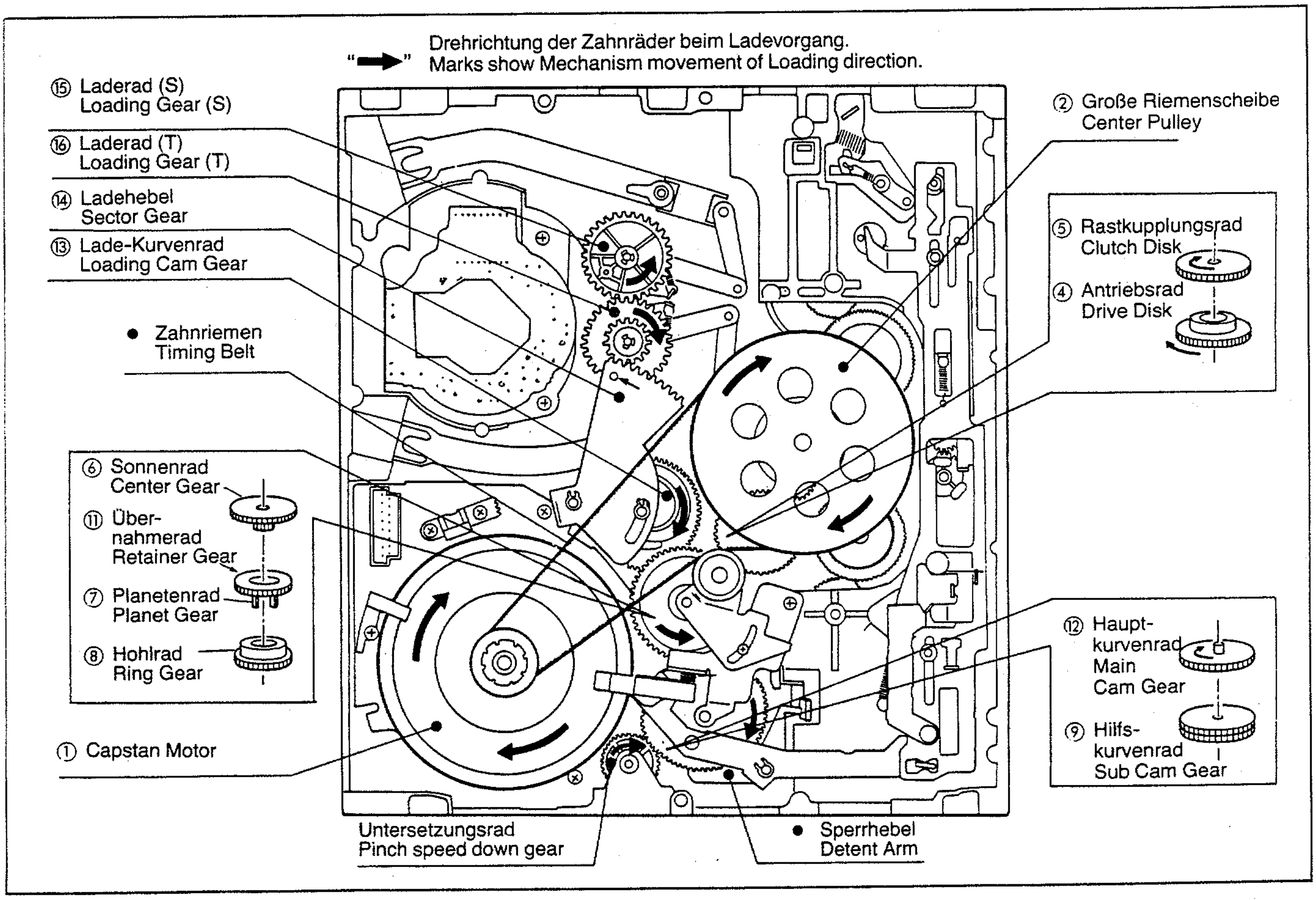

"➡" Drehrichtung der Zahnräder beim Ladevorgang.
Marks show Mechanism movement of Loading direction.
⑮ Laderad (S)
Loading Gear (S)
⑯ Laderad (T)
Loading Gear (T)
⑭ Ladehebel
Sector Gear
⑬ Lade-Kurvenrad
Loading Cam Gear
● Zahnriemen
Timing Belt
⑥ Sonnenrad
Center Gear
⑪ Über-nahmerad
Retainer Gear
⑦ Planetenrad
Planet Gear
⑧ Hohlrad
Ring Gear
① Capstan Motor
Untersetzungsrad
Pinch speed down gear
● Sperrhebel
Detent Arm
② Große Riemenscheibe
Center Pulley
⑤ Rastkupplungsrad
Clutch Disk
④ Antriebsrad
Drive Disk
⑫ Haupt-kurvenrad
Main Cam Gear
⑨ Hilfs-kurvenrad
Sub Cam Gear

Fig. 10

4. Manueller Auswurf

Wenn das Gerät elektrisch defekt ist, das Ausfädeln und das Auswerfen nicht funktioniert, ist es möglich, diesen Vorgang manuell nachzuvollziehen.

1. Den Netzstecker des Gerätes ziehen.
2. Den Wechselschieber in Pfeilrichtung drücken und somit lösen (Fig. 11).
3. Den Capstanmotor langsam entgegen der Uhrzeigerrichtung drehen, bis die Rastkupplung gesperrt ist.
   (Die Rastkupplung ist einmal pro Umdrehung gesperrt.)
4. Den Wechselschieber wieder lösen, wenn die Rastkupplung gesperrt ist.
5. Die Punkte 2 und 3 so lange wiederholen, bis die Kassette ausgeworfen wird.

4. How To Eject Manually

If the electrical circuit is defective and the action of unloading and front unloading don´t work properly, it is possible to eject manually as follows.

1. Take out the Main AC.
2. Release the Change Lever by pushing in the arrow mark direction as shown in Fig. 11.
3. Turn the capstan motor to counter clockwise slowly until the Clutch Disk is locked.
   (Clutch Disk is locked once in one rotation.)
4. Release the Change Lever again when the Clutch Disk is locked.
5. Repeat the 2. and 3. until cassette is ejected.

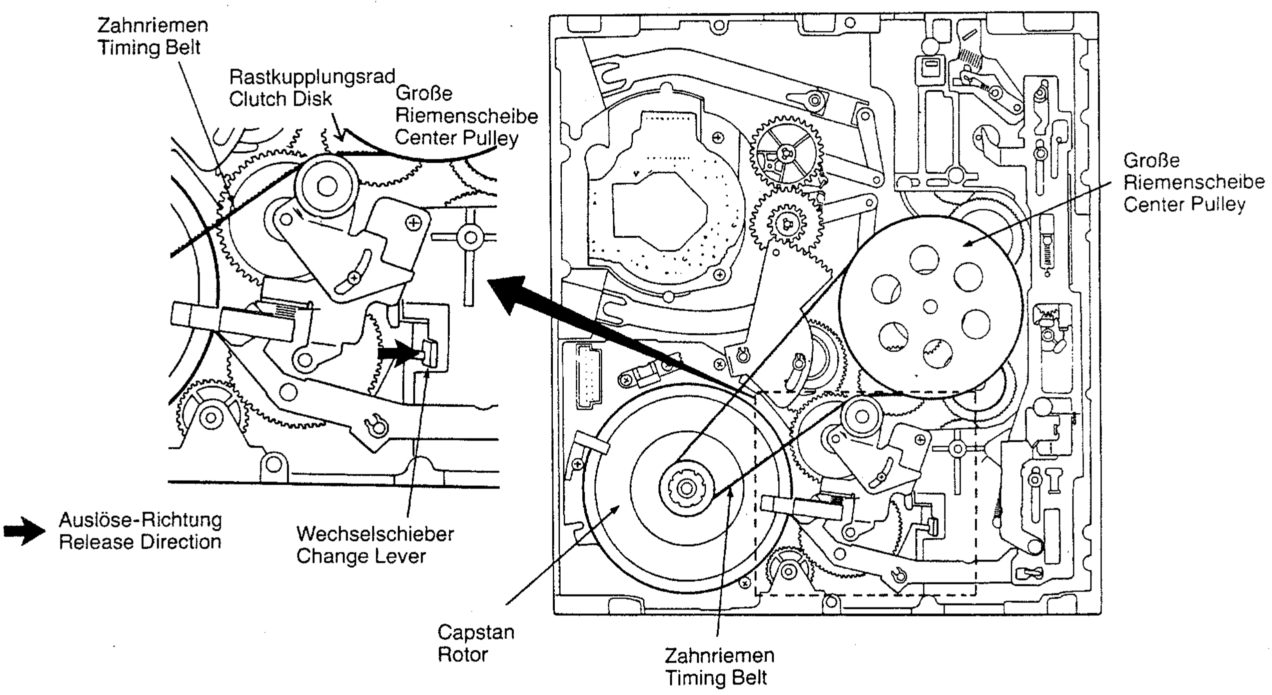

Zahnriemen
Timing Belt
Rastkupplungsrad
Clutch Disk
Große
Riemenscheibe
Center Pulley
Große
Riemenscheibe
Center Pulley
Auslöse-Richtung
Release Direction
Wechselschieber
Change Lever
Capstan
Rotor
Zahnriemen
Timing Belt

Fig. 11

5. Die Überprüfung der Zusatzplatinen auf der Hauptplatine

Die Zusatzplatinen wie Luminanz/Farbteil, Tonteil, Servo, Kanalwahl, usw. kann man prüfen, indem man die Hauptplatine senkrecht hochstellt bzw. über das Laufwerk legt (Isolierung dazwischen legen!) Fig. 12.

5. How To Make Easier Servicing of A Packed Circuit

In Case of the packed circuit such as Luminance/Chrominance. Audio, Servo, CH select and so on, you may check easily by standing Main C.B.A. vertically or by placing it on the mechanism (put some insulating material in between), see fig. 12.

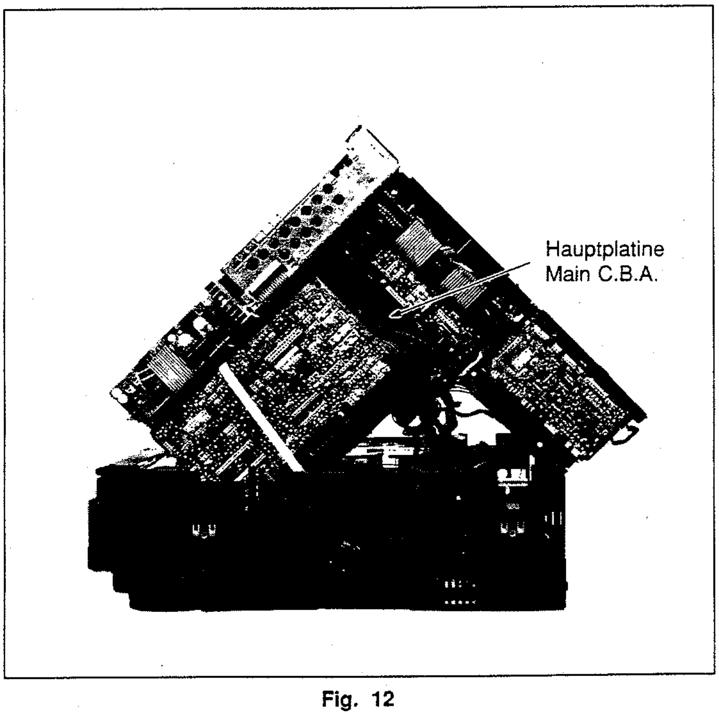

Hauptplatine
Main C.B.A.

Fig. 12

6. Überprüfung bzw. Reparieren der Timerschaltung

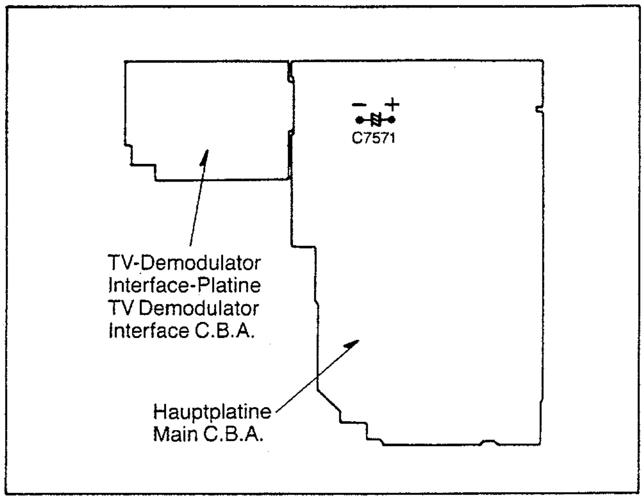
Beim Überprüfen oder Reparieren der Timerschaltung müssen folgende Schritte befolgt werden, um die Schaltung zu schützen.

1. Den Stecker des Gerätes ziehen.
2. C 7571 kurzschließen, indem eine Brücke über die Anschlüsse gelötet wird.
3. Nun die Schaltung überprüfen und ggf. reparieren.
4. Den Kurzschluß nach der Überprüfung bzw. Reparatur wieder entfernen.

6. How To Check or Replace The Timer Circuit

When checking or replacing the Timer circuit, the following steps should be followed to protect this circuit.

1. Disconnect the AC mains.
2. Make a short circuit at C 7571 by connecting a wire to both lead wires of the C 7571.
3. Check or replace the parts.
4. After checking or replacing the parts, remove the short circuit from C 7571.



C7571
TV-Demodulator Interface-Platine
TV Demodulator Interface C.B.A.
Hauptplatine
Main C.B.A.

Fig. 13

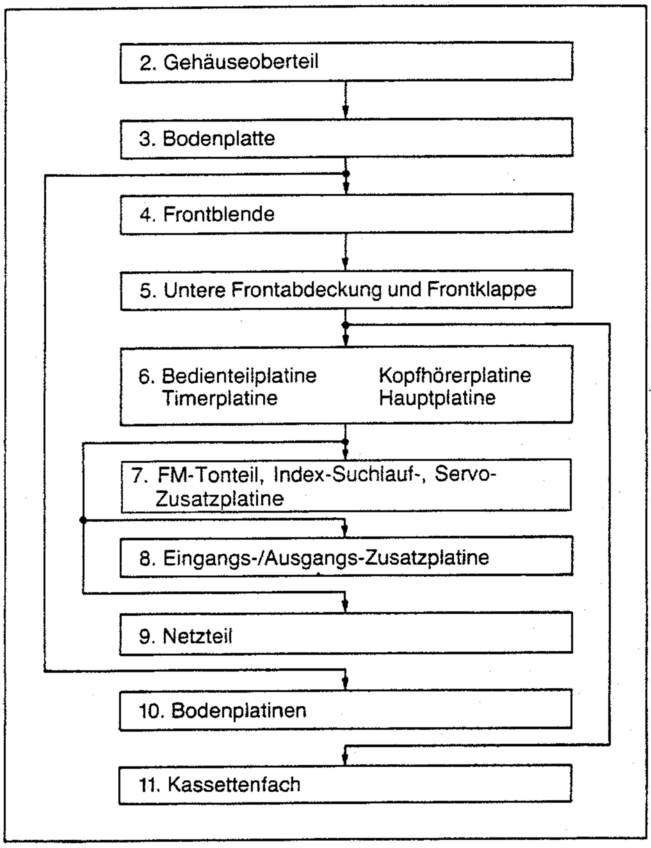
Servicevorbereitungen

1. Flußdiagramm

Dieses Flußdiagramm zeigt die Demontageschritte der Gehäuseteile und Platinen, um die zu wartenden Teile zu finden. Die Schritte werden in der umgekehrten Reihenfolge für die Montage ausgeführt.

Hinweis:

Wenn die Frontblende entfernt wird, darauf achten, daß die Verriegelungsteile nicht beschädigt werden.



2. Gehäuseoberteil
3. Bodenplatte
4. Frontblende
5. Untere Frontabdeckung und Frontklappe
6. Bedienteilplatine Timerplatine Kopfhörerplatine Hauptplatine
7. FM-Tonteil, Index-Suchlauf-, Servo-Zusatzplatine
8. Eingangs-/Ausgangs-Zusatzplatine
9. Netzteil
10. Bodenplatinen
11. Kassettenfach

Fig. 1

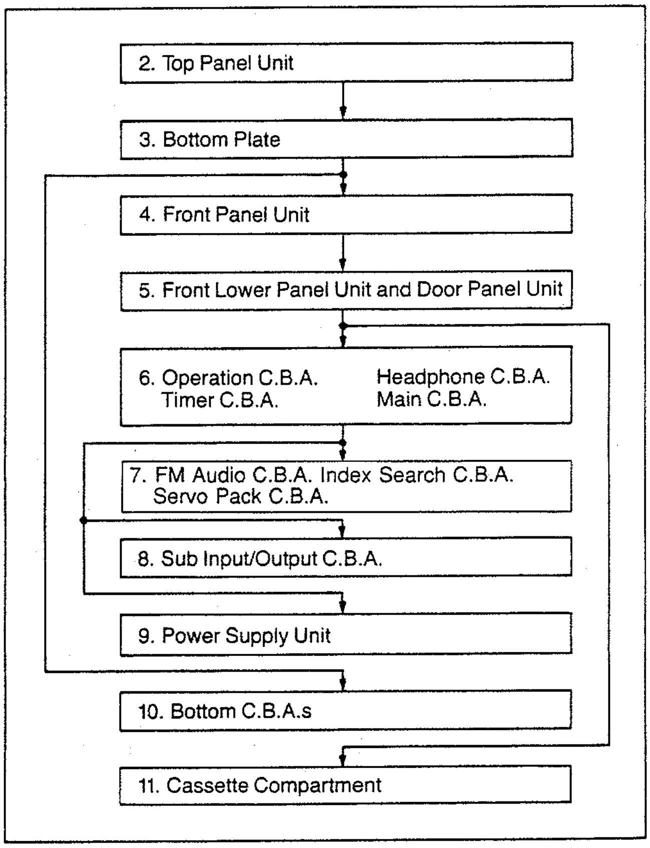
Service Preparations

1. Flowchart

This flowchart indicates disassembly steps of the cabinet parts and the P.C.Boards in order to find the necessary items for servicing. When reassembling, perform the steps in the reserve order.

Note:

When removing the Front panel, be careful to avoid any damages for the locking portions of the panel.



2. Top Panel Unit
3. Bottom Plate
4. Front Panel Unit
5. Front Lower Panel Unit and Door Panel Unit
6. Operation C.B.A. Timer C.B.A. Headphone C.B.A. Main C.B.A.
7. FM Audio C.B.A. Index Search C.B.A. Servo Pack C.B.A.
8. Sub Input/Output C.B.A.
9. Power Supply Unit
10. Bottom C.B.A.s
11. Cassette Compartment

Fig. 2

2. Entfernen des Gehäuseoberteiles

1. Die 4 Schrauben (A) seitlich am Gehäuse entfernen und das Gehäuseoberteil vorsichig an der Rückseite anheben und abnehmen.

2. Removal of the Top Panel Unit

1. Unscrew 4 Screws (A) on the Top Panel Unit and carefully lift the rear of case to remove.

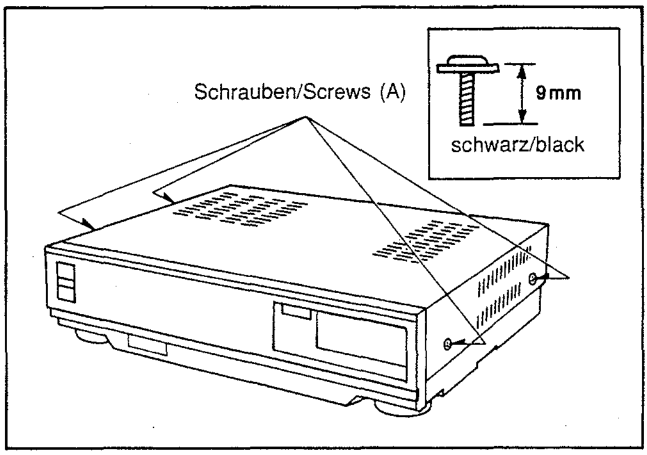

Schrauben/Screws (A)
9mm
schwarz/black

Fig. 3

3. Entfernen der Bodenplatte

1. Das Gerät auf eine weiche Unterlage stellen.
2. Die 8 Schrauben (B) entfernen und die Bodenplatte abnehmen.

3. Removal of the Bottom Plate

1. Place the deck on a soft surface.
2. Unscrew 8 Srews (B) and lift off the Bottom Plate.

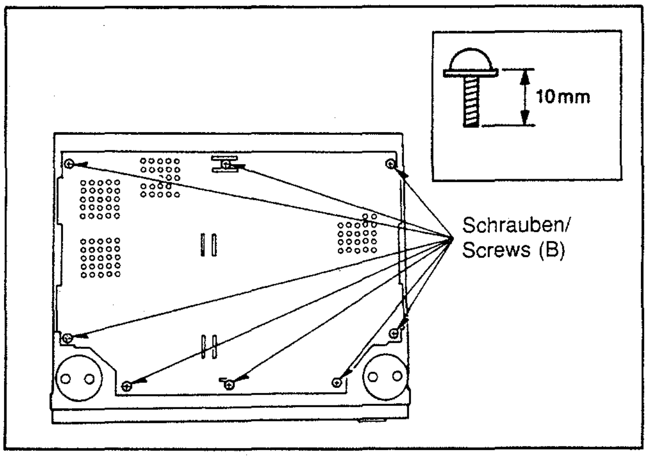

10mm
Schrauben/
Screws (B)

Fig. 4

4. Entfernen der Frontblende

1. Die 2 Schrauben (C) entfernen und die Frontklappe öffnen. Nun die 5 Verriegelungen (D) lösen und die Frontblende abnehmen.

5. Entfernen der unteren Frontabdeckung und der Frontklappe

1. Die 6 Schrauben (E) entfernen und anschließend die Frontklappe schließen.

4. Removal of Front Panel Unit

1. Open the Door Panel Unit and unscrew 2 srews (C) and then unlock 5 locking portions (D).

5. Removal of Front Lower Panel Unit and Door Panel Unit

1. Unscrew 6 screws (E) and then shut the Door Panel Unit.

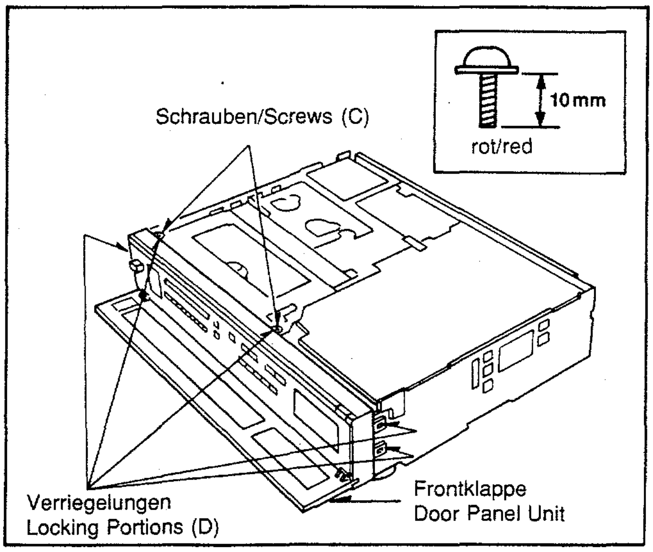

Schrauben/Screws (C)
10mm
rot/red
Verriegelungen
Locking Portions (D)
Frontklappe
Door Panel Unit

Fig. 5

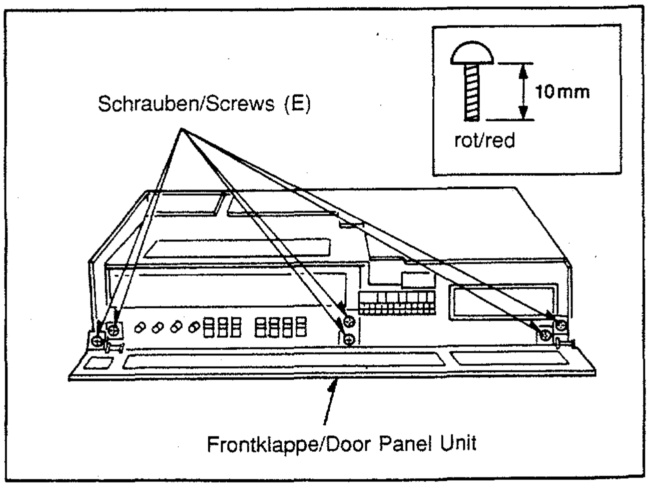

Schrauben/Screws (E)
10mm
rot/red
Frontklappe/Door Panel Unit

Fig. 6

2. Die 3 Verriegelungen (F) lösen und die untere Frontabdeckung abnehmen.
3. Die Klemmvorrichtung der Steckerwanne P 7502 hochdrücken und das Folienkabel herausziehen.
4. Nun die 3 Schrauben (G) entfernen und die Frontklappe vorsichtig abnehmen.

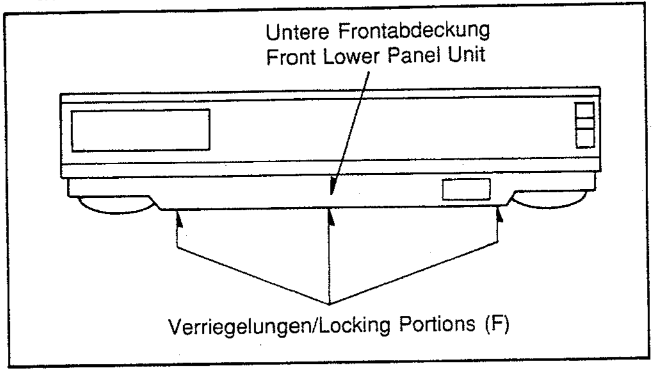

Untere Frontabdeckung
Front Lower Panel Unit
Verriegelungen/Locking Portions (F)

Fig. 7

6. Abnehmen von Bedienteilplatine, Timerplatine, Kopfhörerplatine und Hauptplatine

1. Die 6 Schrauben (H) entfernen und die 6 Verriegelungen (I) lösen.
2. Die Masseleitung der Kopfhörerplatine lösen.
3. Nun die 2 Kabelklemmen öffnen und die Bedienteilplatine, die Timerplatine und die Kopfhörerplatine vorsichtig abnehmen.
4. Die 4 Schrauben (J) an der Rückseite entfernen.

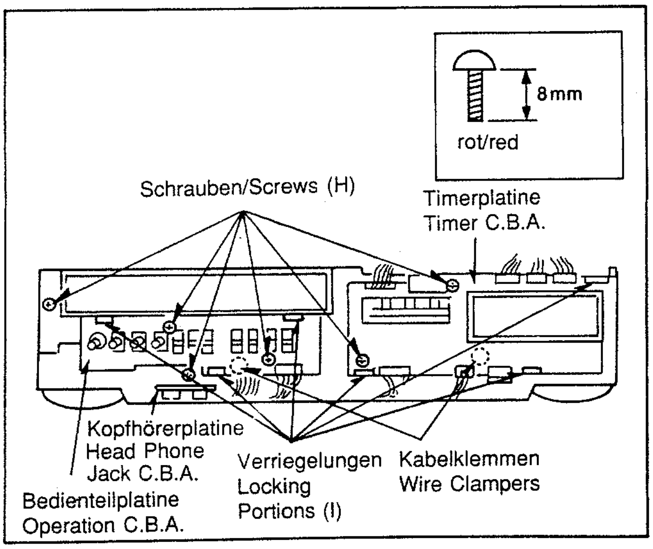

8mm
rot/red
Schrauben/Screws (H)
Timerplatine
Timer C.B.A.
Kopfhörerplatine
Head Phone
Jack C.B.A.
Bedienteilplatine
Operation C.B.A.
Verriegelungen
Locking
Portions (I)
Kabelklemmen
Wire Clampers

Fig. 9

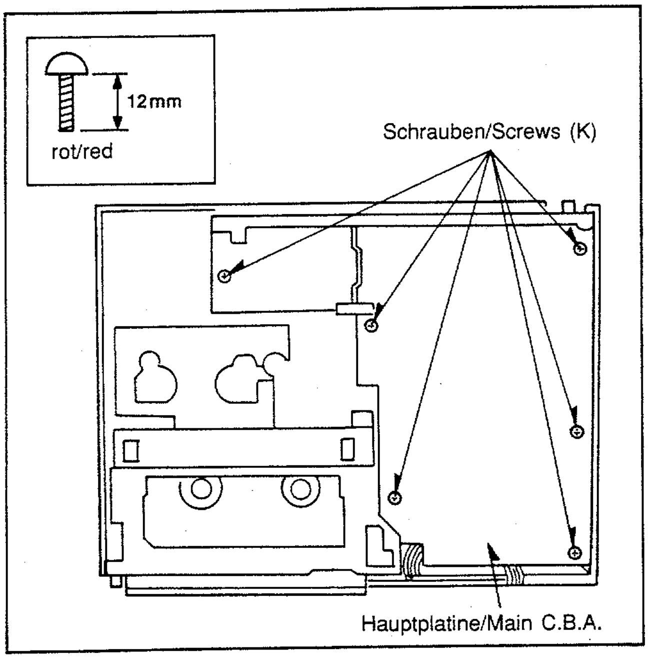

12mm
rot/red
Schrauben/Screws (K)
Hauptplatine/Main C.B.A.

Fig. 11

2. Unlock 3 locking portions (F).
   Remove the Front Lower Panel Unit.
3. Unlock the connector lock of P 7502 on the Timer C.B.A. and remove the flexible wire.
4. Next, unscrew 3 srews (G) and carefully remove the Door Panel Unit.

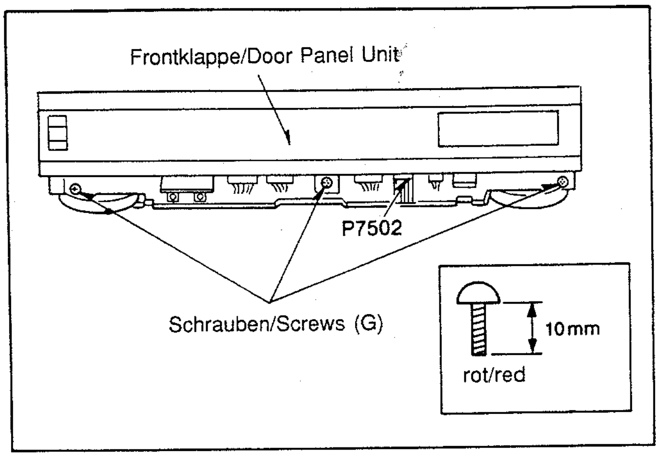

Frontklappe/Door Panel Unit
P7502
Schrauben/Screws (G)
10mm
rot/red

Fig. 8

6. Opening of the Operation C.B.A., Timer C.B.A., Headphone C.B.A. and Main C.B.A.

1. Unscrew 6 screws (H) and unlock 6 locking portions (I).
2. Loosen the ground lead of the headphones C.B.A.
3. Then unlock 2 wire clampers and carefully open the Operation C.B.A., Timer C.B.A. and Headphone C.B.A.
4. Unscrew 4 screws (J) on the rear panel.

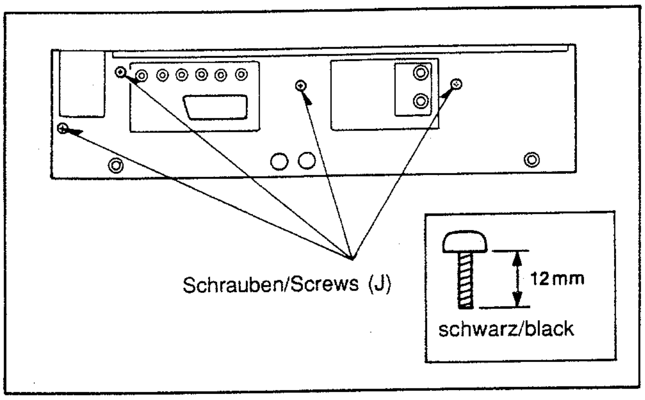

Schrauben/Screws (J)
12mm
schwarz/black

Fig. 10

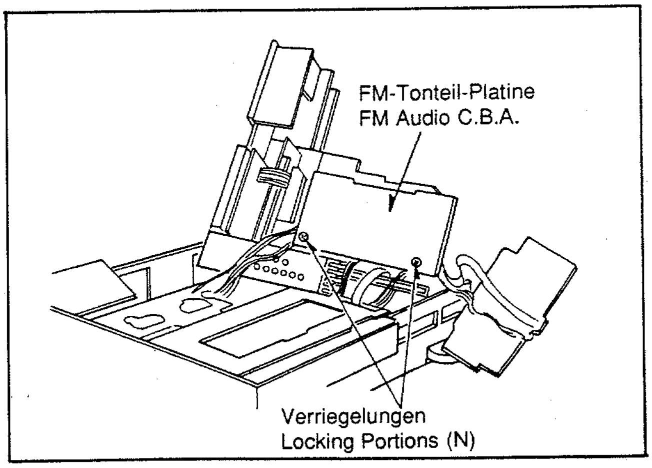

FM-Tonteil-Platine
FM Audio C.B.A.
Verriegelungen
Locking Portions (N)

Fig. 12

5. Die 6 Schrauben (K) entfernen und die Masseleitung der S-VHS Platine lösen. Dann die Hauptplatine aufklappen.
Hinweis: Um die Hauptplatine aufklappen zu können, müssen einige Kabelbinder gelöst werden. Bei der Montage ist auf korrekte Kabellage zu achten.

7. Aufklappen der FM-Tonteil-Platine und der Index-Suchlaufplatine

1. Die 2 Verriegelungen (N) Fig. 12 lösen und die FM-Tonteil-Platine aufklappen.
2. Nun die 2 Verriegelungen (O) Fig. 13 lösen und die Index-Suchlaufplatine aufklappen.

8. Herausnehmen der Eingangs-/Ausgangs-Zusatzplatine

1. Die 2 Verriegelungen (P) lösen und die Eingangs-/Ausgangs-Zusatzplatine nach oben herausnehmen.

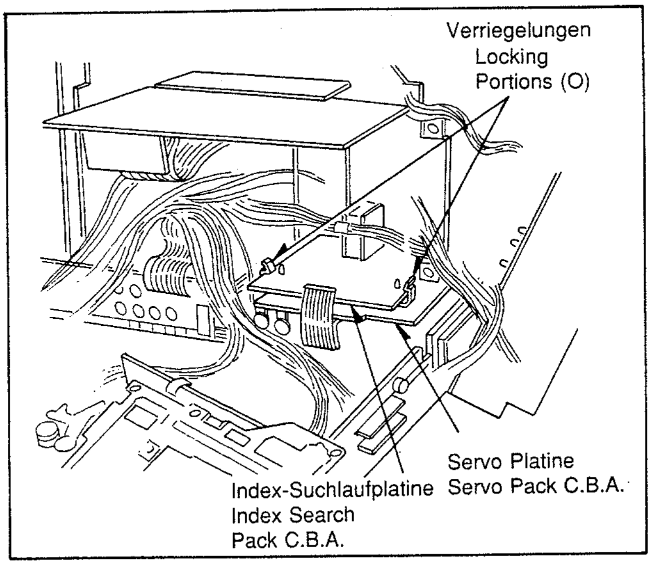

Verriegelungen
Locking
Portions (O)
Servo Platine
Servo Pack C.B.A.
Index-Suchlaufplatine
Index Search
Pack C.B.A.

Fig. 13

9. Abnehmen des Netzteiles

1. Die 2 Schrauben (Q) entfernen und das Netzteil von der Hauptplatine abnehmen.
2. Nach Abnehmen des Abschirmgehäuses kann das Netzteil überprüft werden.

10. Abnehmen der Bodenplatinen

1. Die 4 Schrauben (R) entfernen und die S-VHS-Platine aufklappen.
2. Nun die 3 Schrauben (S) entfernen und die S-VHS-Luminanz- und Farbteil-Platine aufklappen.

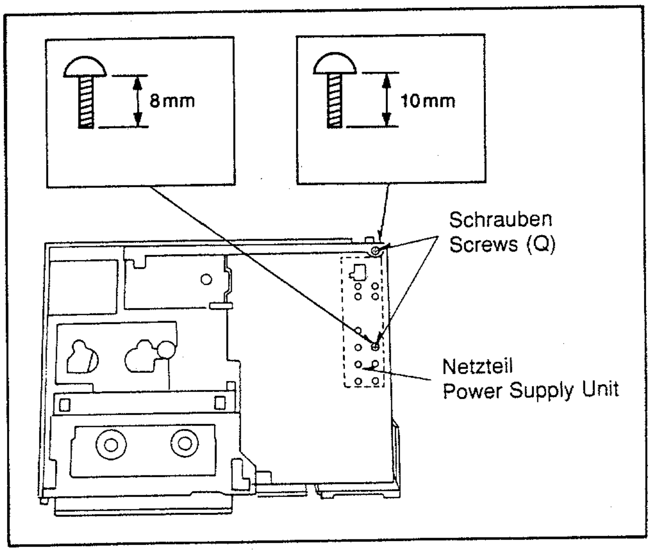

8mm
10mm
Schrauben
Screws (Q)
Netzteil
Power Supply Unit

Fig. 15

5. Unscrew 6 screws (K) on the Main C.B.A. and loosen the ground lead of the S-VHS C.B.A. Then open the Main C.B.A.
Note: In order to open the Main C.B.A. some cable loops must be undone. Make sure that the cables are routed correctly when assembling the set.

7. Opening of the FM Audio C.B.A. and Index Search-Pack C.B.A.

1. Unlock 2 locking portions (N) and open up the FM Audio C.B.A.
2. Next, unlock 2 locking portions (O) Fig. 13 and open up the Index Search C.B.A.

8. Opening of the Sub Input/Output C.B.A.

1. Unlock 2 locking portions (P) and open the Sub Input/Output Pack C.B.A.

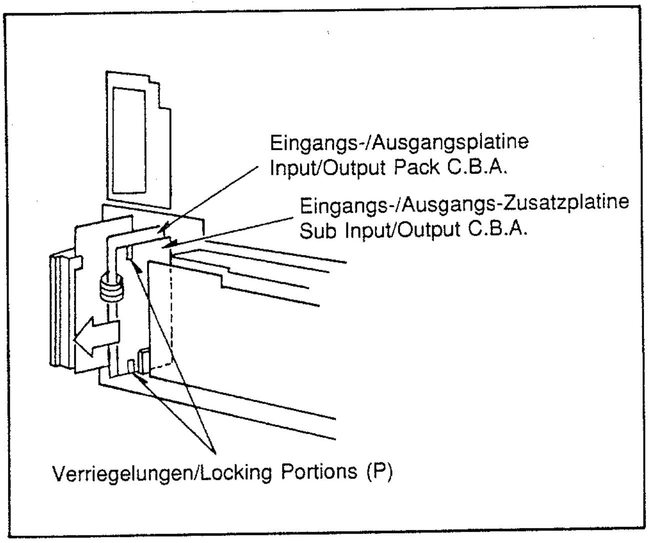

Eingangs-/Ausgangsplatine
Input/Output Pack C.B.A.
Eingangs-/Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.
Verriegelungen/Locking Portions (P)

Fig. 14

9. Removal of Power Supply Unit

1. Remove 2 screws (Q) and take them out from the Main C.B.A.
2. Remove the shield case then checking can be performed.

10. Opening of Bottom C.B.A.s

1. Unscrew 4 screws (R) and open the S-VHS C.B.A.
2. Next, unscrew 3 screws (S) and open the S-VHS Luminance and Chrominance C.B.A.

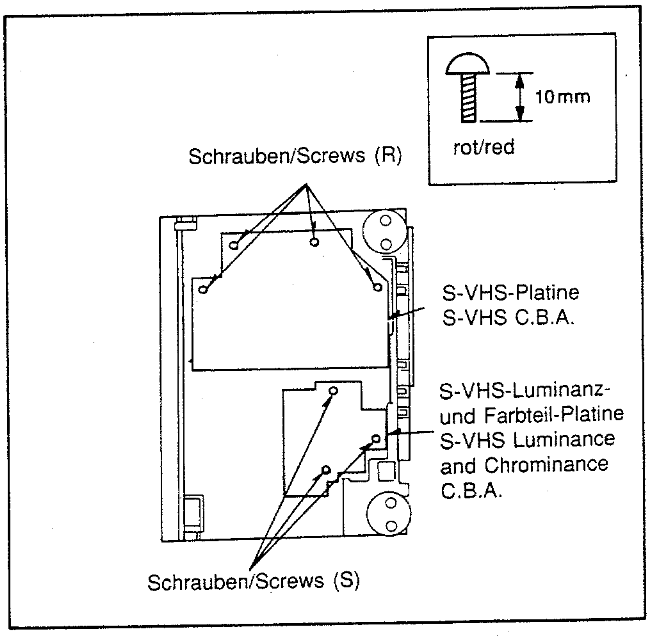

10mm
rot/red
Schrauben/Screws (R)
S-VHS-Platine
S-VHS C.B.A.
S-VHS-Luminanz- und Farbteil-Platine
S-VHS Luminance and Chrominance C.B.A.
Schrauben/Screws (S)

Fig. 16

11. Ausbau des Kassettenfaches

1. Die 2 Schrauben (U) entfernen. Nun den Kassettenschlitten verschieben, bis die 2 Schrauben (V) erscheinen und sich entfernen lassen.

   Hinweis:
   Zum Verschieben des Kassettenschlittens den Capstanmotor bzw. die große Riemenscheibe an der Unterseite rechtsherum drehen (Fig. 18); dazu müssen die Bodenplatinen aufgeklappt werden (siehe Seite 1 – 15).
2. Das Folienkabel aus der Steckerwanne P 1503 ziehen und das Kassettenfach herausheben.

11. Removal of Cassette Compartment

1. Remove 2 Screws (U). Slide the cassette holder until the 2 screws (V) appear and can be removed.

   Note:
   In order to slide the cassette holder, the capstan motor or the center pulley has to be turned clockwise on the bottom side (fig. 18); to do so, the bottom CBA's have to be opened (see page 1 – 15).
2. Remove the flexible wire from the connector P 1503 and pull out the cassette compartment.

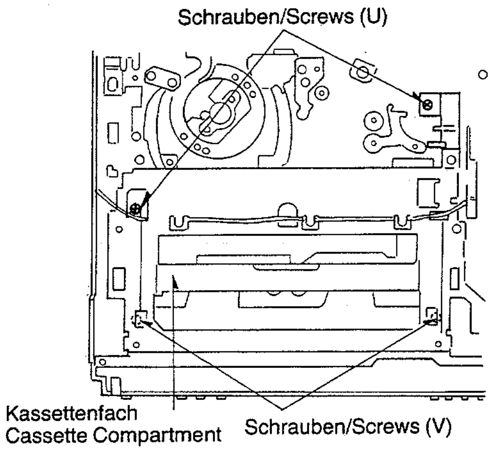


Fig. 17

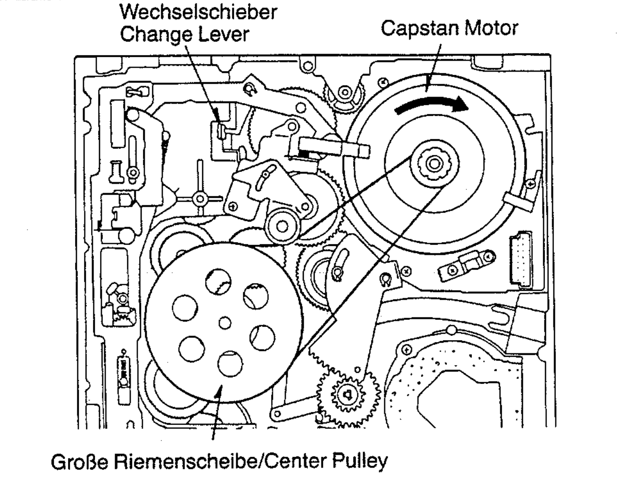


Fig. 18

Hinweis:
Funktionskontrolle ohne Kassettenfach und ohne Kassette
Das Laufwerk von Hand in die Stop-Position bringen. Dazu die große Riemenscheibe linksherum drehen, bis der mechanische Anschlag erreicht ist. Zwischendurch den Wechselschieber bzw. den Anker des Elektromagneten drücken (Fig. 19 und 20). Nun die große Riemenscheibe rechtsherum drehen, bis sie das erste Mal frei läuft. Den Wechselschieber bzw. den Anker des Elektromagneten drücken und die Riemenscheibe weiterdrehen, bis sie das zweite Mal frei läuft. Jetzt ist die Stop-Stellung erreicht.
Das Laufwerk ist nun in allen Funktionen auch ohne Kassettenfach und ohne eingelegter Kassette voll funktionsfähig. Das Folienkabel (P 1503) rechts am Kassettenfach muß abgezogen sein.

Note:
Performance check without cassette compartment and without cassette
Put the tape deck by hand to stop position. To do so, turn the center pulley counterclockwise to the mechanical stop. While doing so, press the change lever or the solenoid (fig. 19 and 20). Now turn the center pulley clockwise until it turns freely for the first time. Press the change lever or the solenoid and keep on turning the center pulley until it turns freely for the second time. The stop position has now been reached.
The tape deck is now fully functional even without cassette compartment and without cassette being loaded. The flexible cable (P 1503) at the right side of the cassette compartment must be pulled off.

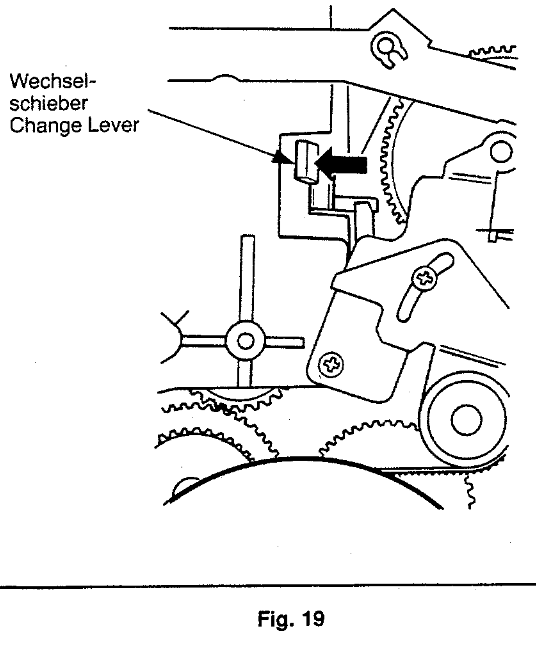


Fig. 19

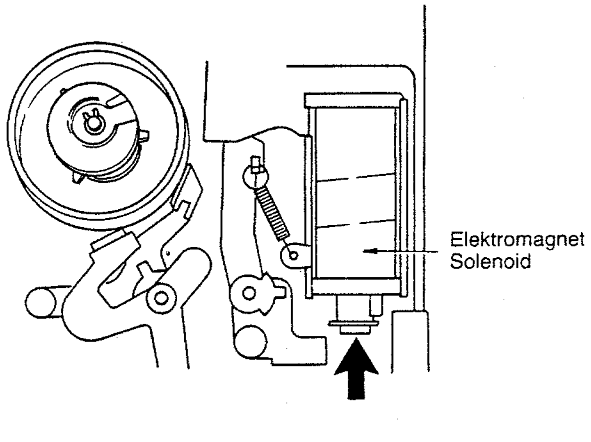


Fig. 20

Montage des Kassettenfaches

Der Einbau des Kassettenfaches kann in zwei verschiedenen Laufwerkstellungen erfolgen:

A: Laufwerkstellung „Stop“ gleich Zwischenladestellung
B: Laufwerkstellung „Eject“ gleich Kassettenschlitten vorn

A. Einbau des Kassettenfaches bei Laufwerkstellung „Stop“

1. Das Laufwerk in die „Stop“-Position bringen, siehe Seite 1 – 16.
2. Die zwei Schrauben (A) Fig. 21 entfernen.
3. Den Stecker P 1508 ziehen und die Deckplatte vom Kassettenfach abnehmen (Fig. 21).
4. Die Kassettenschiebereinheit, wie in Fig. 21a gezeigt, ausbauen.

Assembly of Cassette Compartment

The cassette compartment can be assembled in two different tape deck positions:

A: Tape deck position “Stop” = intermediate loading position
B: Tape deck position “Eject” = cassette holder in front

A. Assembly of Cassette Compartment from “Stop” Position

1. Set the tape deck to “Stop” position, see page 1 – 16.
2. Remove the two screws (A), fig. 21.
3. Disconnect plug P 1508 and take off the top plate from the cassette compartment (fig. 21).
4. Disassemble the cassette holder unit as shown in fig. 21 a.

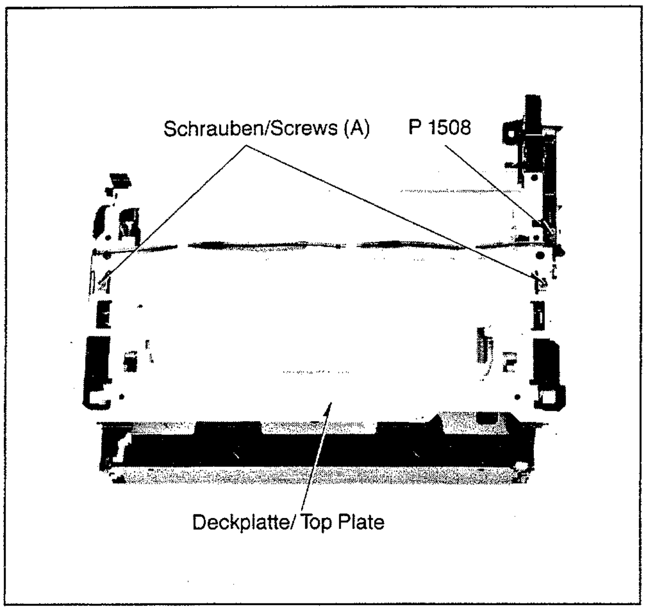

Schrauben/Screws (A)
P 1508
Deckplatte/ Top Plate

Fig. 21

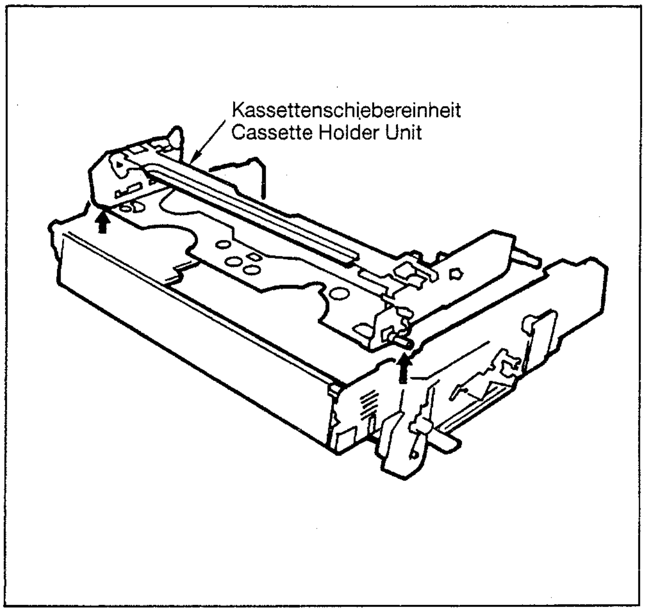

Kassettenschiebereinheit
Cassette Holder Unit

Fig. 21 a

5. Den Hilfsschieber in Pfeilrichtung drücken (Fig. 21 b), bis der Hilfsschieber vollständig in der Position „Kassette geladen“ ist.

5. Press the sub wiper arm as indicated by the arrow (fig. 21 b) until the sub wiper arm is fully in “cassette down” position.

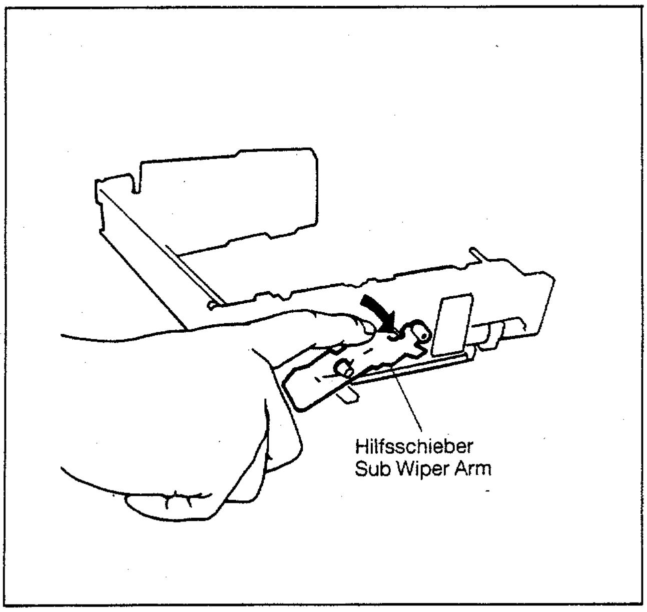

Hilfsschieber
Sub Wiper Arm

Fig. 21 b

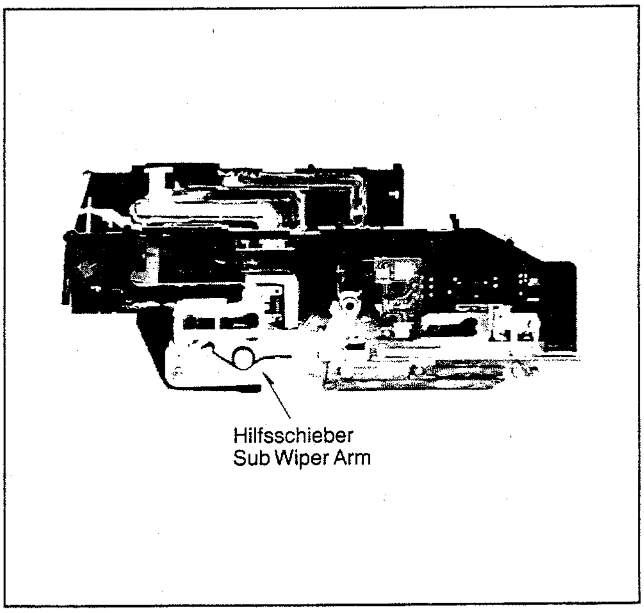

Hilfsschieber
Sub Wiper Arm

Fig. 21 c

6. Das Kassettenfach ohne Kassettenschiebereinheit einbauen. Beim Einbau darauf achten, daß der letzte Zahn der Rack-A-(1)-Zahnstange in einer Linie mit der Markierung auf dem Verbindungsrad ist (Fig. 21 d).

6. Reinstall the cassette compartment (without cassette holder). Make sure that the last tip of rack gear A (1) aligns with the marking position of the connection gear (fig. 21 d).

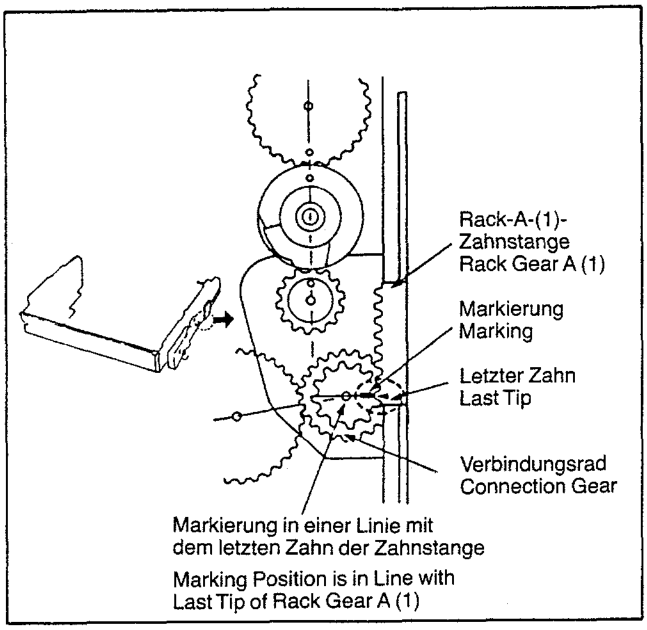

Rack-A-(1)-Zahnstange
Rack Gear A (1)
Markierung
Marking
Letzter Zahn
Last Tip
Verbindungsrad
Connection Gear
Markierung in einer Linie mit dem letzten Zahn der Zahnstange
Marking Position is in Line with Last Tip of Rack Gear A (1)

Fig. 21 d

7. Die vier Schrauben (B) einsetzen und festschrauben (Fig. 21 e).

7. Tighten the 4 screws (B) (fig. 21 e).

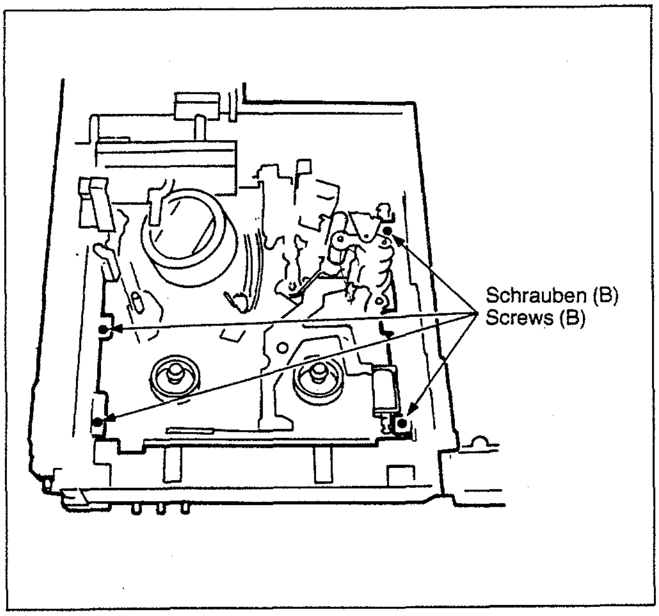

Schrauben (B)
Screws (B)

Fig. 21 e

8. Das Laufwerk durch Drehen der großen Riemenscheibe (linksherum) in die Eject-Position bringen. Dabei den Wechselschieber bzw. den Anker des Elektromagneten 2mal betätigen.
9. Die Kassettenschiebereinheit wieder einbauen; dabei umgekehrt vorgehen wie unter Punkt 4 gezeigt. Darauf achten, daß die Zapfen der Kassettenschiebereinheit in die Schlitze der rechten und linken Hilfsschieber greifen.
10. Die Deckplatte wieder montieren.

8. Put the tape deck in eject position by turning the center pulley (counterclockwise). While doing so, actuate the change lever or the solenoid twice.
9. Reinstall the cassette holder unit, proceeding as described in para.4, but in reverse order. Make sure that the pegs of the cassette holder unit grasp into the slots of the right and left sub wiper arms.
10. Reinstall the top plate.

B. Einbau des Kassettenfaches bei Laufwerkstellung „Eject“

Hinweis:
Bei dieser Montagemethode muß sich das Laufwerk in der „Eject“-Stellung befinden.

1. Den Wechselschieber (auf der Unterseite) oder den Anker des Elektromagneten (auf der Oberseite) betätigen, um die Sperre zu entriegeln.
2. Die große Riemenscheibe linksherum drehen, bis die Mechanik des Laufwerkes voll in der „Eject“-Position (Anschlag) steht und dort festhalten. Evtl. den Wechselschieber bzw. den Anker des Elektromagneten ein zweites Mal betätigen.
3. Die Position der Markierung oder des Loches im Verbindungsrad (Draufsicht, rechte Seite) merken, und die große Riemenscheibe rechtsherum drehen, so daß die Markierung oder das Loch des Verbindungsrades genau eine Umdrehung zurückgedreht ist. Diese Position halten.

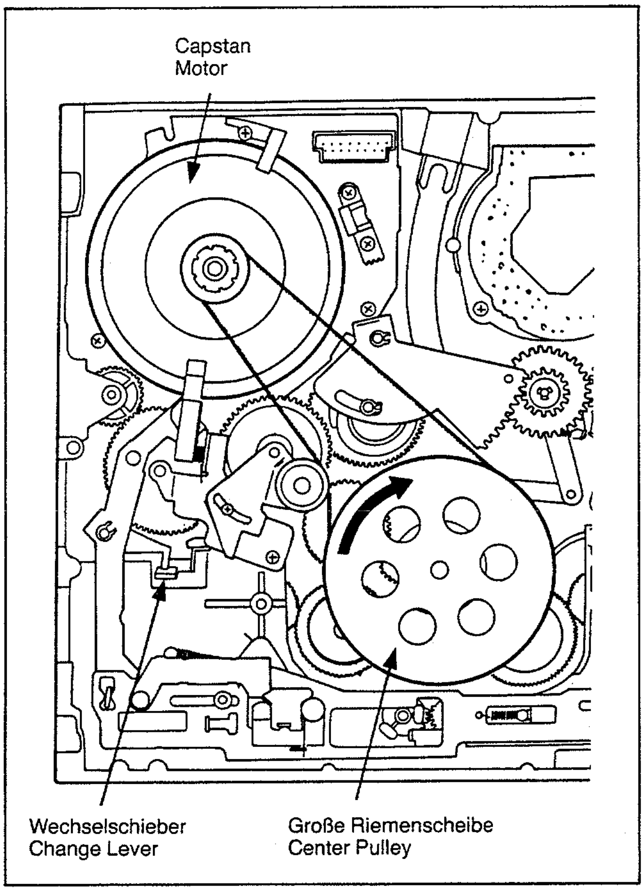


Fig. 22

4. Die Kassettenschiebereinheit etwas verschieben, so daß der zweite Zahn der Rack-(A)-1-Zahnstange (Unteransicht, rechte Seite des Kassettenfaches) sich in der Mitte des Langloches befindet (siehe Fig. 22 b).
5. Die 2 Schrauben (P) lösen und vorsichtig die Deckplatte vom Kassettenfach abheben (so daß das Verbindungsrad und die Rack-A-(1)-Zahnstange bei der Montage gesehen werden können).

B. Mounting the Cassette Compartment from “Eject” Position

Note:
For this kind of mounting, the tape deck must be in "Eject" Position.

1. Actuate the change lever (bottom side) or the solenoid (top) to release the lock.
2. Turn the center pulley counterclockwise until the tape deck mechanism is fully in "Eject" position (stop), and keep it in this position. If necessary, actuate the change lever or the solenoid for a second time.
3. Note the position of the marking or hole on the connection gear (top view, right side) and turn the center pulley clockwise until the marking or hole on the connection gear has made exactly one turn backwards. Keep it in this position.

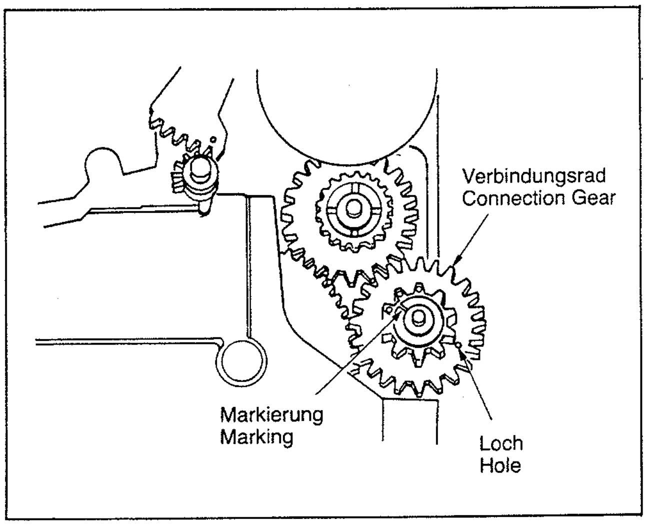


Fig. 22a

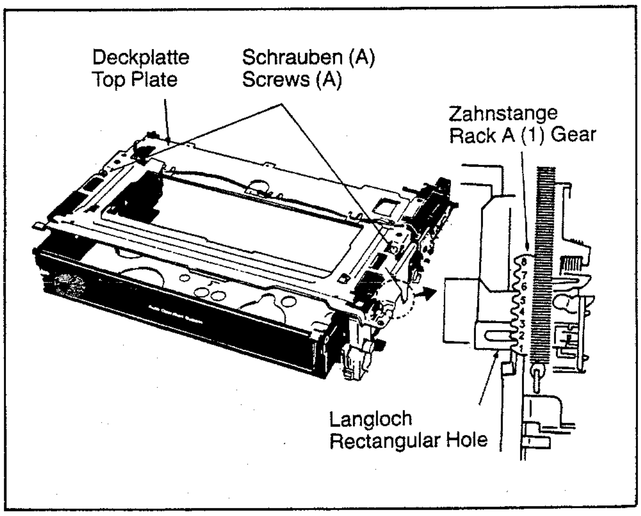


Fig. 22 b

4. Slide the cassette holder unit just a little so that second tip of rack A (1) gear (located bottom view, right side of cassette compartment) comes to centre of rectangular hole as shown in Fig. 22 b.
5. Remove the 2 screws (P) and carefully remove the top plate from the cassette compartment. (So that connection gear and rack A (1) gear can be seen when reinstalling.)

6. Vorsichtig das Kassettenfach in das Chassis einbauen, so daß der zweite Zahn der Rack-A-(1)-Zahnstange sich in der fünften Nut des Verbindungsrades befindet. Sollte dies nicht der Fall sein, die Kassettenschiebereinheit in die richtige Stellung schieben.

6. Install slowly the cassette compartment to chassis so that the second tip of rack A (1) gear comes into the fifth slot of connection gear. If it is not, slide the cassette holder for correct position.

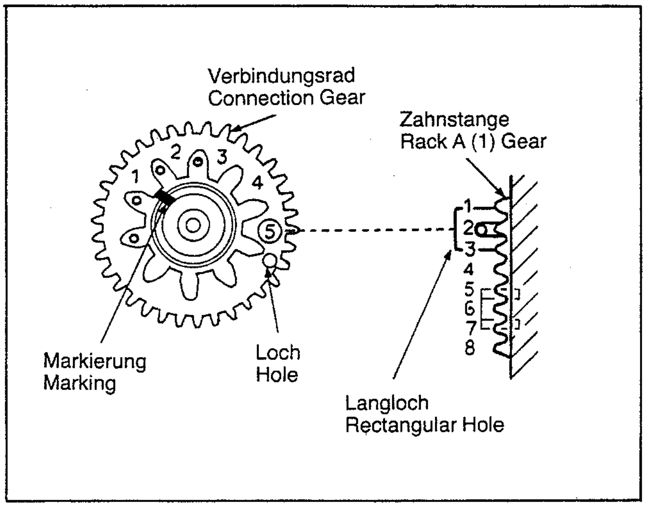

Verbindungsrad
Connection Gear
Zahnstange
Rack A (1) Gear
1
2
3
4
⑤
1
2
3
4
5
6
7
8
Markierung
Marking
Loch
Hole
Langloch
Rectangular Hole

Fig. 22 c

7. Die Deckplatte montieren, und den Stecker P 1503 wieder einstecken. Sollte das Laufwerk nicht einwandfrei funktionieren, alle Einbaupunkte wiederholen.

7. Reinstall the top plate and fasten the 2 screws (P) and tighten the 4 screws (N) and (O).
Re-connect the flexible cable to P 1503.
If mechanism doesn't work correctly carefully repeat the steps 1–7.

Mechanischer Abgleich

1. Auswechseln der Kopftrommel-Einheit

Sehr sorgfältig arbeiten, wenn die Kopftrommel entfernt oder ausgewechselt wird.
Während der Wartung den Videokopf nicht berühren.

1. Die beiden Schrauben (Q) entfernen, um den Kopfverstärker auszubauen.
2. Die Schraube (R) entfernen, um den Erdungshalter herauszunehmen.
3. Den 5pol. Stecker an der Kopftrommel-Treiberplatine lösen.
4. Die 3 Schrauben (S) entfernen, um die Kopftrommel-Einheit (mit der Kopftrommel-Treiberplatine) herauszunehmen.

Mechanical Adjustment Procedure

1. Replacement of the D.D. Cylinder Unit

Work with extreme care when removing or replacing the D.D. cylinder unit.
Do not touch the video head during servicing.

1. Remove the 2 screws (Q) to take the Head Amp Pack out.
2. Remove the 1 screw (R) to take the Earth Holder Unit out.
3. Disconnect the 5P connector on the cylinder drive C.B.A.
4. Remove the 3 screws (S) to take the D.D cylinder unit (with the cylinder drive C.B.A.) out.

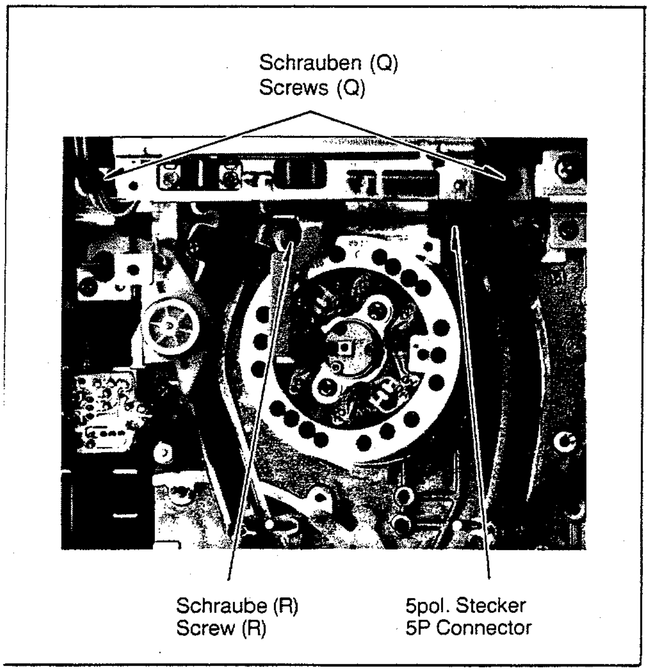

Schrauben (Q)
Screws (Q)
Schraube (R)
Screw (R)
5pol. Stecker
5P Connector

Fig. 23

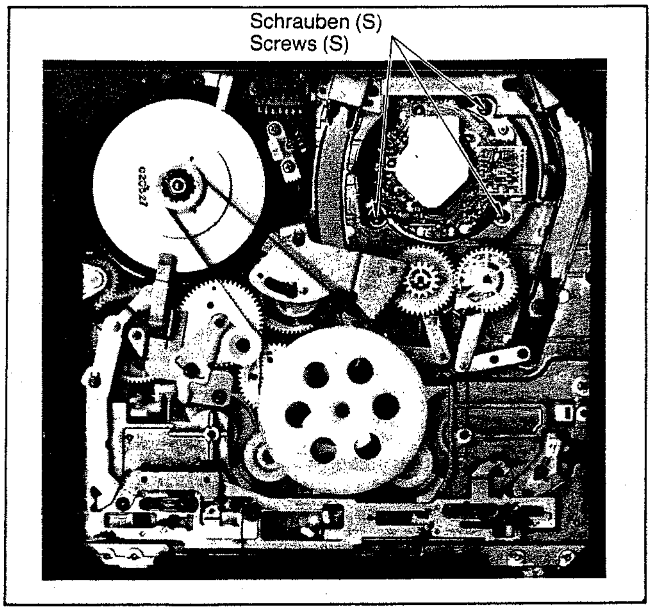

Schrauben (S)
Screws (S)

Fig. 24

Hinweis 1:
Zwischen der Kopftrommel-Einheit und dem Chassis gibt es nur einen geringen Zwischenraum. Daher die Kopftrommel-Einheit vorsichtig entfernen.

5. Die neue Kopftrommeleinheit einsetzen, die 3 Schrauben (S) festziehen, und die Erdungseinheit mit einer Schraube (R) befestigen. Danach den Kopfverstärker mit den 2 Schrauben (Q) befestigen und den 5poligen Stecker anschließen.

Hinweis 2:

1. Vorsichtig den Videokopf in Laufrichtung mit einem Kopfreinigungsstäbchen (8 627 000 552) reinigen.
2. Nach dem austauschen der Kopftrommel-Einheit den Bandaustauschbarkeits-Abgleich durchführen. Abgleichpunkt 12 A-E.

2. Auswechseln der Kopftrommel-Treiberplatine

1. Die Kopftrommel-Einheit gem. Pkt.1 ausbauen.
2. Die Kopftrommel-Einheit auf den Kopf legen.
3. Die Lötstelle (T) entlöten, um die Abschirmung abzunehmen.
4. Die 18 Lötpunkte (U), die mit einem Pfeil markiert sind, entlöten.
   (Einschließlich der 10 Lötbereiche innerhalb der Abschirmung.)
5. Die 2 Schrauben (V) entfernen, um die Kopftrommel-Treiberplatine auszubauen.
6. Beim Einbau in umgekehrter Reihenfolge vorgehen.

3. Auswechseln der Kopftrommel-Treiber-IC's

1. Die Kopftrommel-Treiberplatine gem. Pkt. 2 ausbauen.
2. Die Schraube (W) entfernen, um das Kühlblech abzunehmen.
3. Das Kopftrommel-Treiber-IC auslöten.
4. Beim Einbau des neuen IC's auf richtige Polung achten.
5. Die 18 Pins des Kopftrommel-Treiber-IC's anlöten.
6. Die Kopftrommel-Treiberplatine an die Kopftrommel-Einheit montieren.

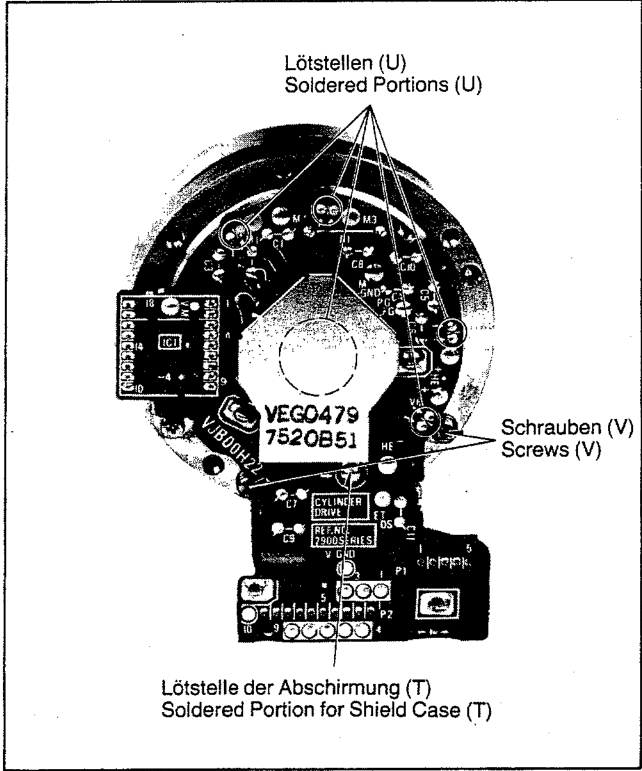


Fig. 25

Note 1:
Since there is very little clearance between the D.D. cylinder unit and the chassis, remove the D.D. cylinder unit gently and carefully.

5. Reinstall the new D.D. Cylinder Unit, tighten the 3 screws (S) and reinstall the Earth Holder Unit, tighten the 1 screw (R). Then re-fasten the Head Amp pack with 2 screws (Q) and connect the 5P connector.

Note 2:

1. Gently rub the video head in direction of tape travel with head cleaning stick (8 627 000 552).
2. After replacement, confirm the performance.
   If any further maintenance is required, perform "Tape Inter changeability Adjustment".

2. Replacement of the Cylinder Drive C.B.A.

1. Remove the D.D. cylinder unit referring to Item 1.
2. Place the D.D. cylinder unit upside down.
3. Unsolder the soldered portion (T) for shield case to take it out.
4. Unsolder the 18 soldered portions (U) indicated by an arrow mark (including 10 soldered portions inside of shield case).
5. Remove the 2 screws (V) to remove the cylinder drive C.B.A. unit.
6. Reinstalling is just reverse way of above procedures.

3. Replacement of the Cylinder Drive IC

1. Remove the Cylinder Drive C.B.A. acc. to item 2.
2. Remove the screw (W) to take the heat sink Plate out.
3. Unsolder the 13 soldered portions of the Cylinder Drive IC to take it out.
4. Reinstall the new IC with the care of pins location.
5. Re-solder the 18 pins of the Cylinder Drive IC.
6. Reinstall the Cylinder Drive C.B.A. to the D.D. Cylinder Unit.

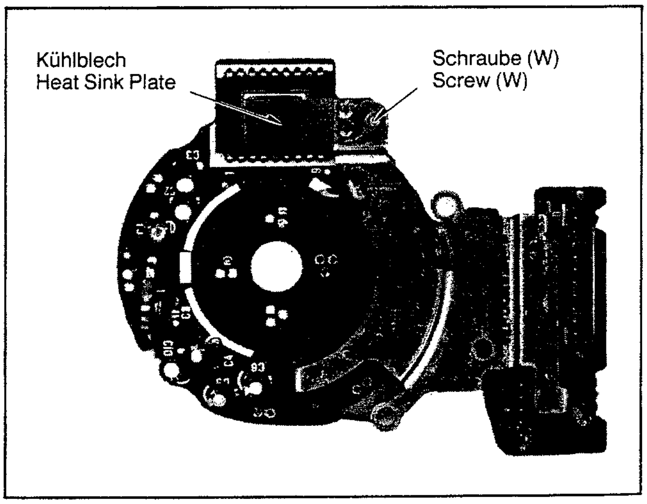


Fig. 26

4. Auswechseln der Kopfscheibe

1. Die 2 Schrauben (X) entfernen (Fig. 27).
2. Die 16 Anschlüsse (Hinweispfeile) von der Kopfplatine ablöten.
3. Die Kopfscheibe durch vorsichtiges Anheben abnehmen.
4. Die Kopfscheibe in umgekehrter Reihenfolge montieren. Beim Wiedereinbau darauf achten, daß der weiße Bereich der Kopfscheibe genau den weißen Bereich der Kopftrommel überdeckt.

4. Replacement of the Upper Cylinder Unit

1. Remove the screw (X) as shown in Fig. 27.
2. Unsolder 16 soldered portions indicated by arrows on the C. Board.
3. Remove the Upper Cylinder Unit by lifting it upward.
4. The new upper cylinder unit can be installed by reversing the removal procedure, however when the upper cylinder is reinstalled, be extremely careful so that white portion of C. Board of the upper cylinder correctly matches the white portion of the bottom cylinder as shown below.

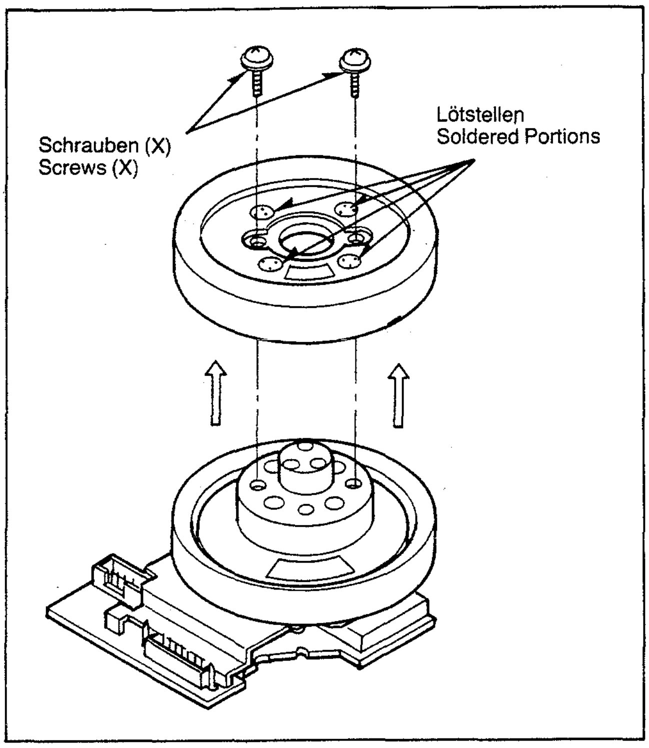

Schrauben (X)
Screws (X)
Lötstellen
Soldered Portions

Fig. 27

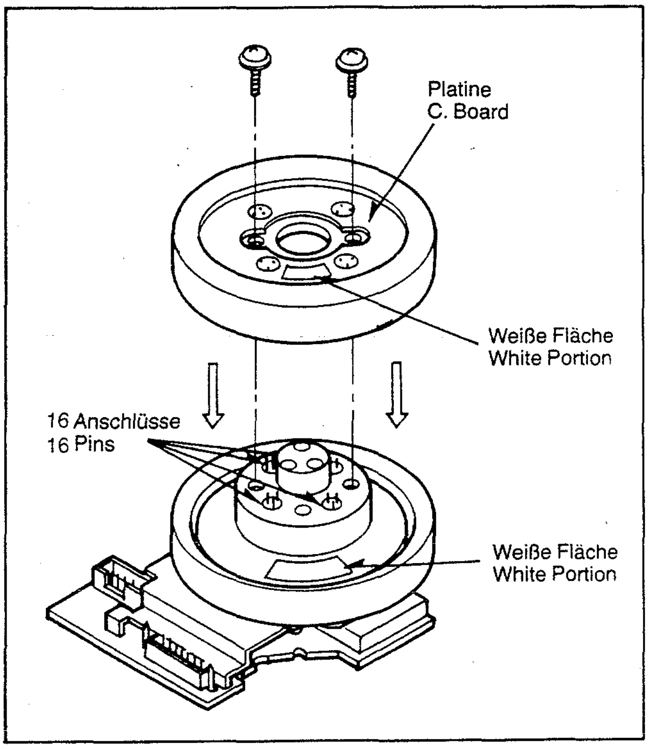

Platine
C. Board
Weiße Fläche
White Portion
16 Anschlüsse
16 Pins
Weiße Fläche
White Portion

Fig. 28

Hinweise:

1. Wenn die Kopfscheibe verdreht eingebaut wird, erscheint keine Farbe, wenn ein bespieltes Band wiedergegeben wird.
2. Nicht die 3 kleinen Schrauben oben auf der Kopftrommel lösen (Fig. 29). Falls diese 3 Schrauben gelöst werden, wird der Kopftrommelmotor zerstört und kann nicht wieder instand gesetzt werden.

Notes:

1. If the Upper Cylinder Unit is reversely installed, no colour would appear when playing back a pre-recorded tape.
2. Do not loosen the 3 small screws on the top of the cylinder as shown in Fig. 29.
   If these 3 screws are loosed, Cylinder motor is broken and not restored.

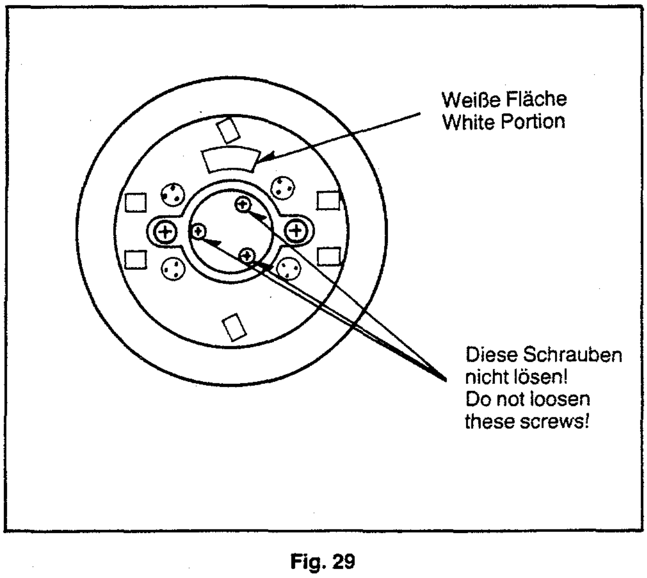

Weiße Fläche
White Portion
Diese Schrauben nicht lösen!
Do not loosen these screws!

Fig. 29

5. Einstellung der mechanischen Spannung des Zahnriemens

Benötigtes Werkzeug:
Federwaage (handelsüblich)

1. Mit Hilfe des Schraubendrehers die Schraube (A) etwas lösen.
2. Die Federwaage in die Richtung ansetzen, die durch den Pfeil (B), Fig. 30, dargestellt ist.
3. Die Schraube (A) festziehen, wenn mit der Federwaage eine Federspannung von 40 ± 5g erreicht ist.

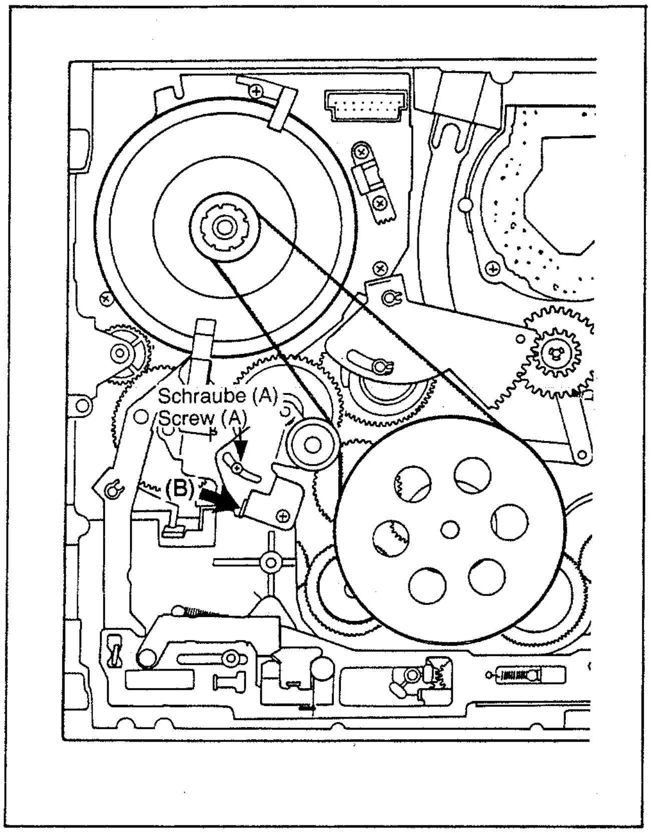

Schraube (A)
Screw (A)
(B)

Fig. 30

6. Einstellung des Bandzughebels

Benötigtes Werkzeug:
Referenzplatte 8 627 105 147,
Sechskantschlüssel 2 mm (Satz 8 627 105 151)

1. Den Netzstecker ziehen.
2. Das Kassettenfach ausbauen und den Stecker P 1503 abziehen.
3. Die große Riemenscheibe im Uhrzeigersinn drehen, während der Wechselschieber gedrückt wird, bis der Einfädelvorgang (Fig. 31) vollständig ausgeführt ist.
4. Die Referenzplatte in das Laufwerk einsetzen, und den Sechskantschlüssel in das Loch der Spannbandbefestigung einsetzen (Fig. 32).
5. Mit Hilfe des Sechskantschlüssels die Spannungsbandbefestigung so einstellen, daß der Spannstift gerade den Rand der Referenzplatte berührt.
6. Nach dem Abgleich die große Riemenscheibe linksherum drehen, bis das Ausfädeln beendet ist (dabei den Wechselschieber drükken).

Hinweis:
Das Kassettenfach, wie ab Seite 1-17 beschrieben, wieder einbauen.

5. Tension Adjustment of Timing Belt

Required equipment:
Spring balance (purchase locally)

1. Loosen a screw (A) slightly by using the screwdriver.
2. Set the Fan Type Tension Gauge to the direction indicated by the arrow (B) as shown in Fig. 30.
3. Tighten a screw (A) when the reading of the Fan Type Tension Gauge becomes within 40 ± 5g.

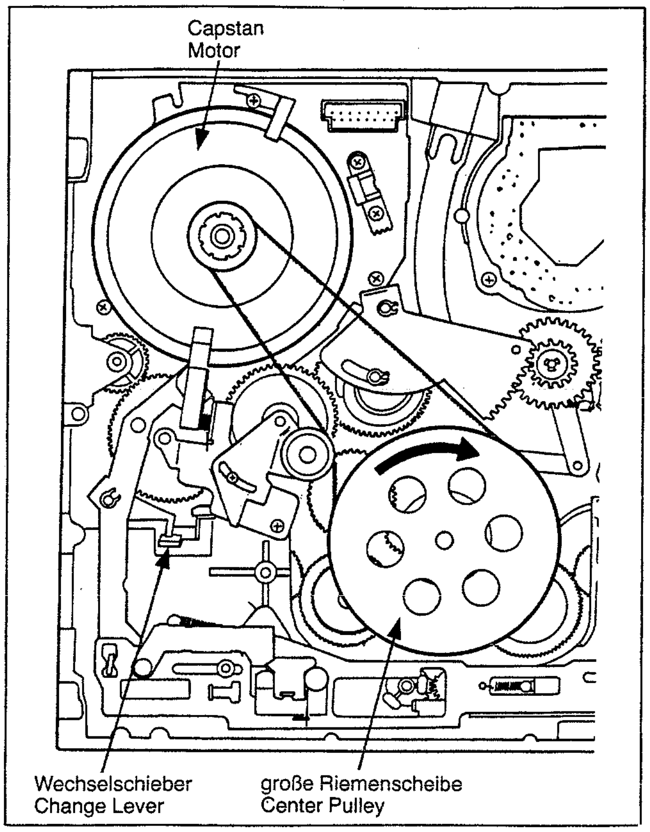

Capstan
Motor
Wechselschieber
Change Lever
große Riemenscheibe
Center Pulley

Fig. 31

6. Position Adjustment of Tension Post

Required equipment:
Reference Plate 8 627 105 147
Hex. Wrench 2 mm (Hex. Wrench Set 8 627 105 151)

1. Disconnect the AC plug.
2. Remove the cassette compartment and disconnect the flexible (flat) cable from P 1503.
3. Turn the Center Pulley to the clockwise while the change lever is being pushed until the loading is completed as shown in Fig. 31.
4. Place the Adjustment Plate and insert the hex. wrench into the hole of Tension Band fastener-B as shown in Fig. 32.
5. Adjust the hole of Tension Band Fastener-B by using the hex. wrench so that the Tension Post just touches the fixture of Adjustment Plate.
6. After the Adjustment, turn the Center Pulley until the unloading is completed (press the change lever while doing so).

Note:
When you assemble cassette compartment refer to page 1-17 for Mounting of Cassette Compartment.

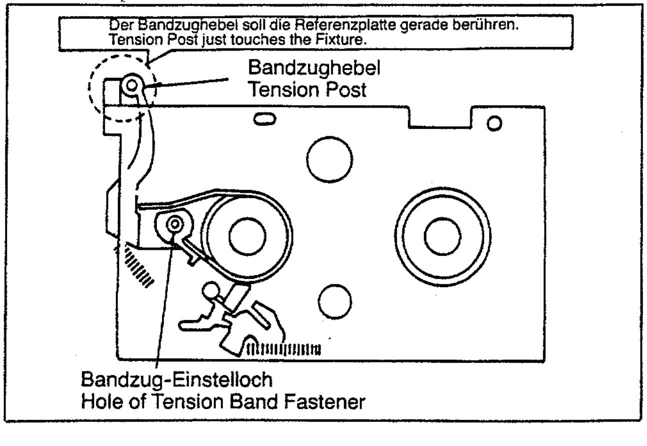

Der Bandzughebel soll die Referenzplatte gerade berühren.
Tension Post just touches the Fixture.
Bandzughebel
Tension Post
Bandzug-Einstelloch
Hole of Tension Band Fastener

Fig. 32

7. Messen und Einstellen des Bandzuges

Benötigtes Werkzeug:
Bandzugwaage 8 627 000 554, VHS-Cassette (120 min)

1. Die Videokassette von Anfang an abspielen und warten, bis sich der Bandlauf stabilisiert hat (ca. 5-10 Sek.).
2. Die Bandzugwaage in den Lauf des Bandes halten und den Bandzug messen. Der vorgeschriebene Wert sollte zwischen 20-30 g liegen.

Hinweise:

1. Während der Messung sicherstellen, daß die 3 Fühler der Bandzugwaage guten Kontakt zum Band haben.
2. Da das Meßgerät sehr empfindlich ist, empfehlen wir, mehrere Messungen durchzuführen.
3. Falls der Meßwert außerhalb der Spezifikation liegt, die Feder in eine andere Kerbe einhängen (Fig. 34).

7. Measurement and Adjustment of Back Tension

Required equipment:
Back Tension Meter 8 627 000 554, VHS Cassette (120 minutes tape)

1. Play back the video tape from the beginning and wait until the tape movement gets stabilized (for approx. 5-10 seconds).
2. Insert the Back Tension Meter into the path of a tape and measure the back tension. The specified value amounts to 20 to 30 g.

Notes:

1. While measuring, make sure that the three probes of the meter are all in good contact with the tape.
2. As the tension meter is very sensitive, we recommend taking 3 separate readings.
3. If it is out of specifications, change the spring notch as shown in Fig. 34.

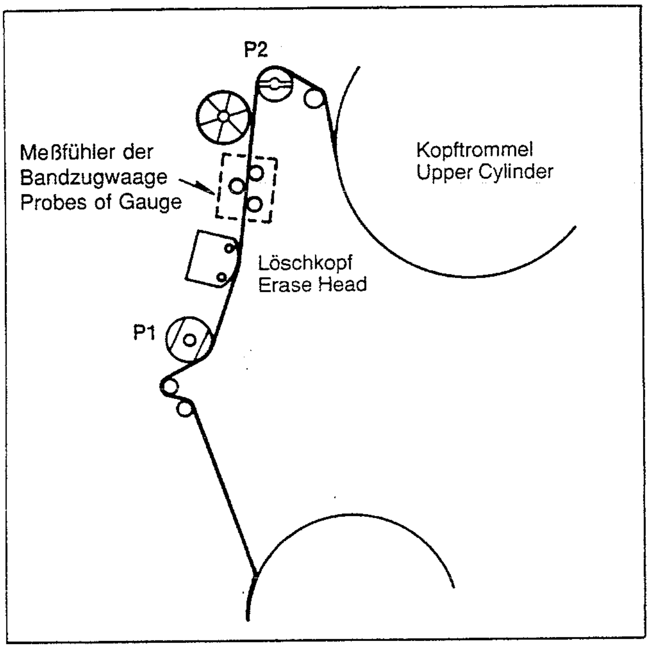


Fig. 33

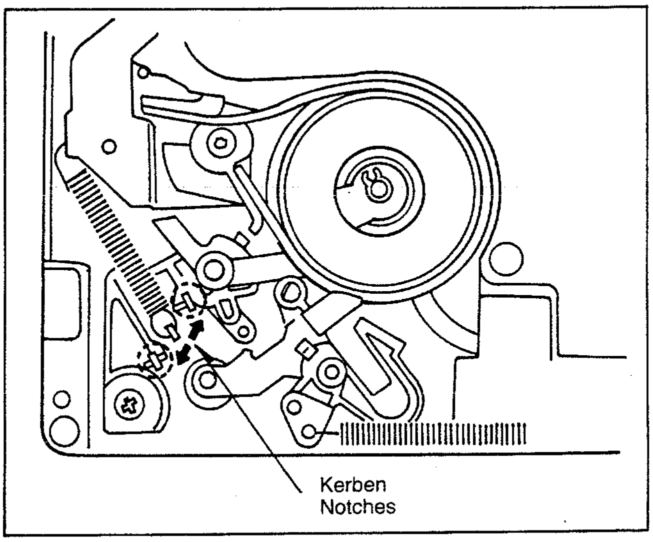


Fig. 34

8. Höheneinstellung der Wickelteller

Benötigtes Werkzeug:
Einstellplatte 8 627 000 725
Höhenmeßuhr 8 627 000 724

1. Das Kassettenfach ausbauen (siehe Seite 1-16).
2. Die Einstellplatte auf den Wickelteller legen.
3. Die Höhenmeßuhr so auf die Platte setzen, daß der Fühler der Meßuhr den ausgeschnittenen Teil der Einstellplatte berührt. Nun die Anzeige der Meßuhr auf „0" eichen (Fig. 35).
4. Danach die Oberkante der Wickelteller messen (Fig. 36).

8. Heigh Adjustment of the Reel Tables

Required equipment:
Post Adjustment Plate 8 627 000 725
Reel Table Height Fixture 8 627 000 724

1. Remove the cassette compartment (see page 1-16).
2. Place the Post Adjustment Plate on the reel tables.
3. Place the Reel Table Height Gauge on the plate so that the scraper of the gauge touches the cut-out portion of the plate, then set the gauge to zero "0" as shown in Fig. 35.
4. Measure the meter indication of top surface of reel table as shown in Fig. 36. And then perform the same measurement and confirmation for the other reel table.

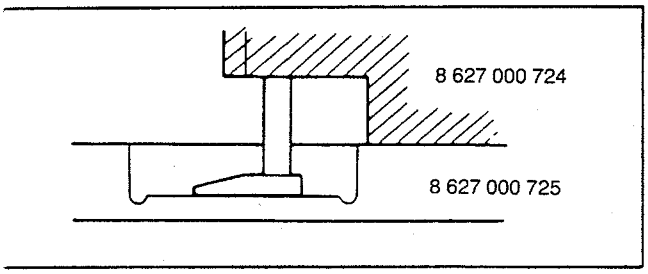


Fig. 35

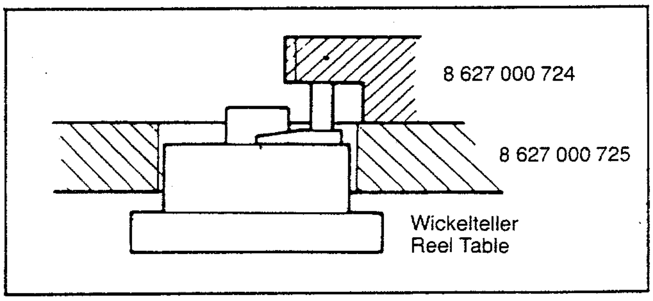


Fig. 36

5. Die Differenz der Meßergebnisse zwischen Wickelteller und Ausschnitt der Platte muß innerhalb der Nennwerte liegen (0 ± 0,2 mm). Liegt sie außerhalb dieser Werte, muß die Höhe des Wickeltellers nachgestellt werden. Zum Ausgleich werden Unterlegscheiben benötigt. Unterlegscheiben sind in den Stärken 0,2 mm, 0,3 mm und 0,5 mm erhältlich.

Unterlegscheiben	Bestellnummer
0,2 mm	8 619 417 413
0,3 mm	8 619 417 412
0,5 mm	8 619 417 411

Hinweis:
Dünnere Scheiben immer unter dickere legen.

9. Höheneinstellung des Capstan-Rotors

Benötigtes Werkzeug:
Höhenmeßuhr 8 627 000 724
Höheneinstellehre 8 627 105 152

1. Die Einstellschraube (Fig. 37) lösen, bis die Capstanrotoreinheit gerade die Spule der Capstanstatoreinheit berührt.
2. Die Höheneinstellehre auf die Capstanrotoreinheit stellen.
3. Die Höhenmeßuhr auf das Kunststoffgehäuse stellen, und den Meßfuß dabei auf die Höheneinstellehre plazieren. Die Höhenmeßuhr auf „0" eichen.
4. Mit der Einstellschraube eine Höhe von 0,5 bis 0,55 mm einstellen.

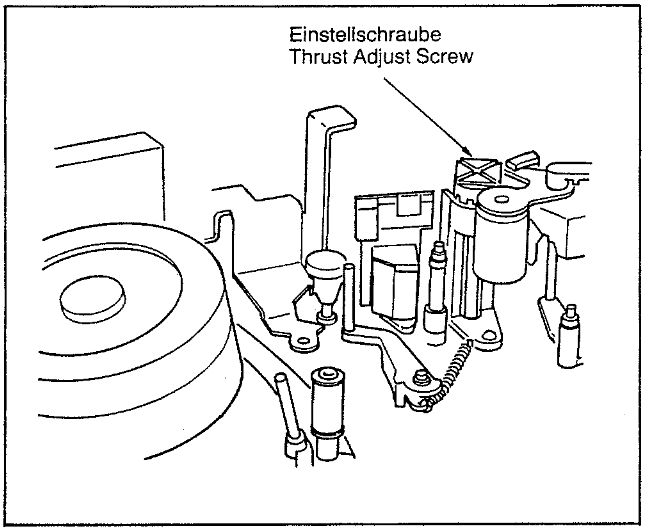

Einstellschraube
Thrust Adjust Screw

Fig. 37

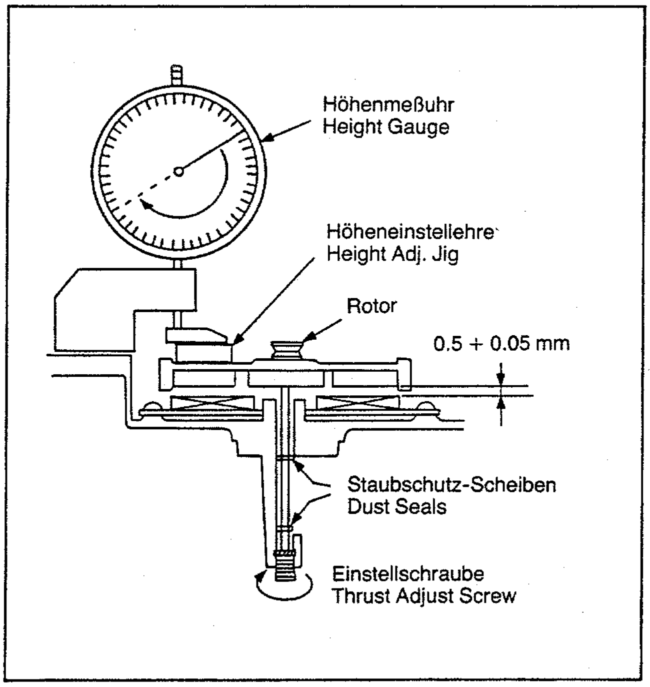

Höhenmeßuhr
Height Gauge
Höheneinstellehre
Height Adj. Jig
Rotor
0.5 + 0.05 mm
Staubschutz-Scheiben
Dust Seals
Einstellschraube
Thrust Adjust Screw

Fig. 39

5. If the difference is more than 0.2 mm higher or lower, replace the poly-slider washer located under the reel table with one of the appropriate thickness. Poly-slider washers are available in thicknesses of 0.2 mm, 0.3 mm and 0.5 mm.

Washers	Part No.
0.2 mm	8 619 417 413
0.3 mm	8 619 417 412
0.5 mm	8 619 417 411

Note:
If you use 0.2 mm or 0.3 mm washers, put these washers under the 0.5 mm washer. (Put these washers on the chassis).

9. Adjustment of the Capstan Thrust Gap

Required Equipment:
Reel Table Height Fixture 8 627 000 724
Height Adjustment Jig 8 627 105 152

1. Loosen a Thrust Adjust Screw slightly until the capstan rotor unit just touches the coil of the capstan stator unit.
2. Set the height adjustment Jig on the capstan Rotor unit.
3. Place the height gauge on the bottom case unit and set the height gauge to zero "0".
4. Adjust a Thrust Adjust Screw so that the thrust gap becomes 0.5-0.55 mm.

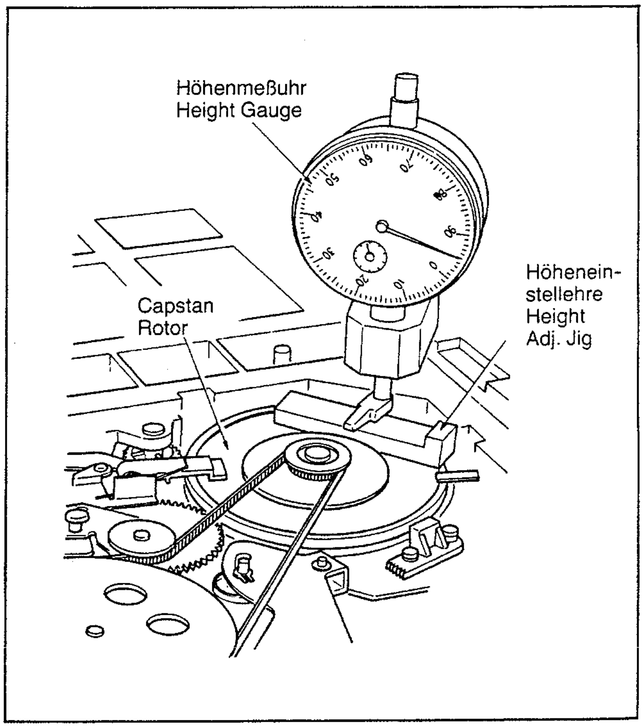

Höhenmeßuhr
Height Gauge
Capstan
Rotor
Höhenein-
stellehre
Height
Adj. Jig

Fig. 38

10. Höheneinstellung der Bandführungen
(P2 und P3 Voreinstellung)

Diese Voreinstellung nur dann durchführen, wenn Bandführungen ausgetauscht oder stark verstellt wurden.

Feineinstellungen siehe Absatz 12 auf den Seiten 1-28 bis 1-31.

Benötigtes Werkzeug:

Höhenmeßuhr	8 627 000 724
Einstellplatte	8 627 000 725
Einstell-Schraubendreher	8 627 000 544

1. Das Kassettenfach ausbauen.
2. Die Einstellplatte in das Laufwerk einsetzen und auf festen Sitz achten, ggf. beschweren (Fig. 40).
3. Die Schrauben der Bandführungen P2 und P3 lösen und die Bandführungen nach unten verstellen (Fig. 41).

10. Height Adjustment of Tape Guide Post
(P2 and P3 Set-up)

This set-up is to be carried out only if tape guides were changed or are strongly out of adjustment.

Fine adjustment, see section 12 pages 1-28 to 1-31.

Required equipment:

Reel Table Height Fixture	8 627 000 724
Post Adjustment Plate	8 627 000 725
Post Adjustment Screwdriver	8 627 000 544

1. Remove the cassette compartment.
2. Place the Post Adjustment Plate over the reel tables. Confirm that the Post Adjustment Plate is firmly seated as shown in Fig. 40.
3. Lower 2 tape guide posts (P2 and P3) by turning the Post Adjustment screwdriver so that the condition of height becomes as shown in Fig. 41. That is, the lower edge of Tape guide should be lower than surface of Adjustment Plate.

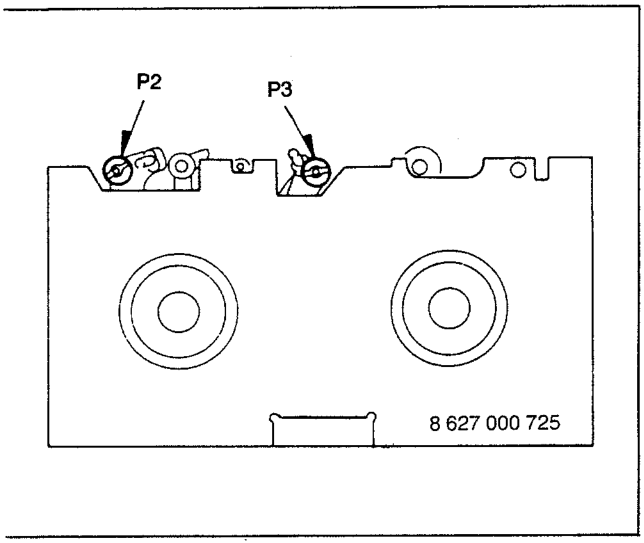


Fig. 40

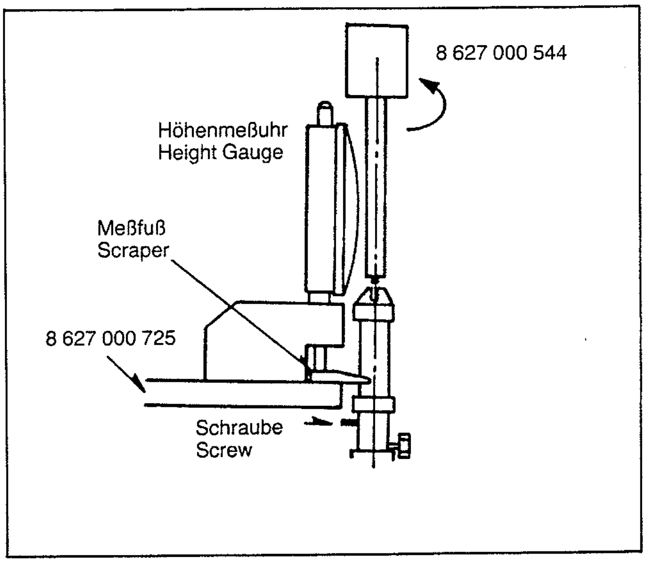


Fig. 41

4. Die Höhenmeßuhr so auf die Einstellplatte stellen, daß der Meßfuß an der Führung, z. B. P2 anliegt (Fig. 42). Die Meßuhr auf „0" stellen und die Führung mit dem Einstell-Schraubendreher 8 627 000 544 solange nach oben drehen, bis sie den Meßfuß berührt.
5. Anschließend die Feineinstellung durchführen (siehe Absatz 12 auf den Seiten 1-28 bis 1-31.

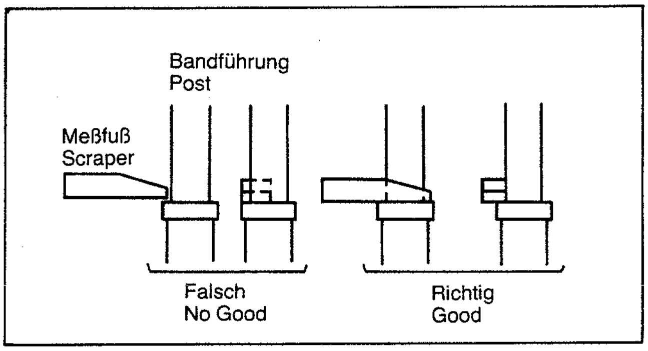


Fig. 42

4. Place the Reel Table Gauge on the Post Adjustment Plate and place the scraper as shown in Fig. 42, set the gauge to zero, then raise the post slowly until the lower tape guide just touches the bottom of the scraper. Use the gauge to determine the exact point at which the lower tape guide touches the scraper.
5. Then perform the fine adjustment (see section 12 on pages 1-28 to 1-31).

11. Höheneinstellung der Bandauszugsführung
(P5)

Benötigtes Werkzeug:

Einstellplatte	8 627 000 725
Höhenmeßuhr	8 627 000 724
Steckschlüssel	5,5 mm

Hinweis:

Die Justiermutter sollte nur eingestellt werden, wenn die Bandauszugsführung abgeglichen oder ausgewechselt wird.

. Das Kassettenfach ausbauen.

2. Die Einstellplatte in das Laufwerk einsetzen und auf festen Sitz achten, ggf. beschweren.
3. Die große Riemenscheibe im Uhrzeigersinn (Laderichtung) drehen, bis der mechanische Zustand erreicht ist, wie in Fig. 43 gezeigt.
4. Die Höhenmeßuhr auf die Einstellplatte stellen und auf „0" eichen (Fig. 44).
5. Die Höhenmeßuhr an die Bandzugsführung schieben und die Justiermutter verstellen, bis die Meßuhr - 0.06 ± 0.01 mm anzeigt.

11. Height Adjustment of the Pull-Out Post
(P5 Post)

Required equipment:

Post Adjustment Plate	8 627 000 725
Reel Table Height Fixture	8 627 000 724
Nut Driver (Purchase locally)	5,5 mm

Note:

Unless the replacement or adjustment of this post is required, the adjustment nut should not be turned.

1. Remove the cassette compartment.
2. Place the Post Adjustment Plate over the reel tables.
3. Turn the Center Pulley to clockwise (loading direction) until the mechanical condition becomes as shown in Fig. 43.
4. Place the Reel Table Height Gauge on the Post Adjustment Plate and set the gauge to zero "0" as shown in (Fig. 44).
5. Place the Reel Table Height Gauge as shown in Fig. 45 and turn the nut slowly until the gauge reads - 0.06 ± 0.01 mm.

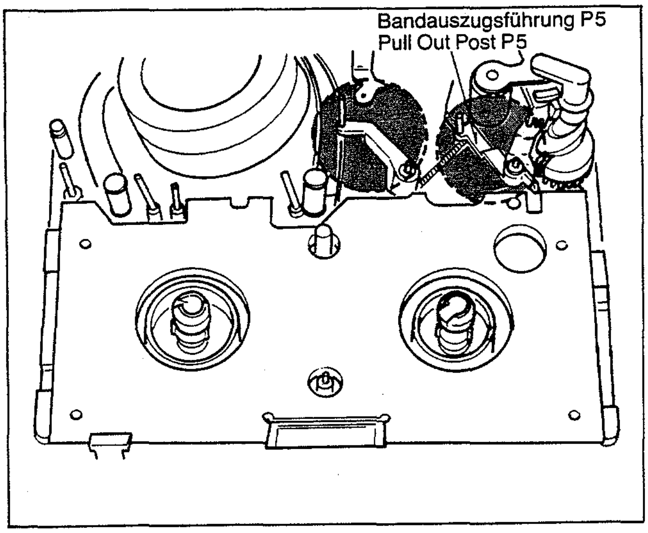

Bandauszugsführung P5
Pull Out Post P5

Fig. 43

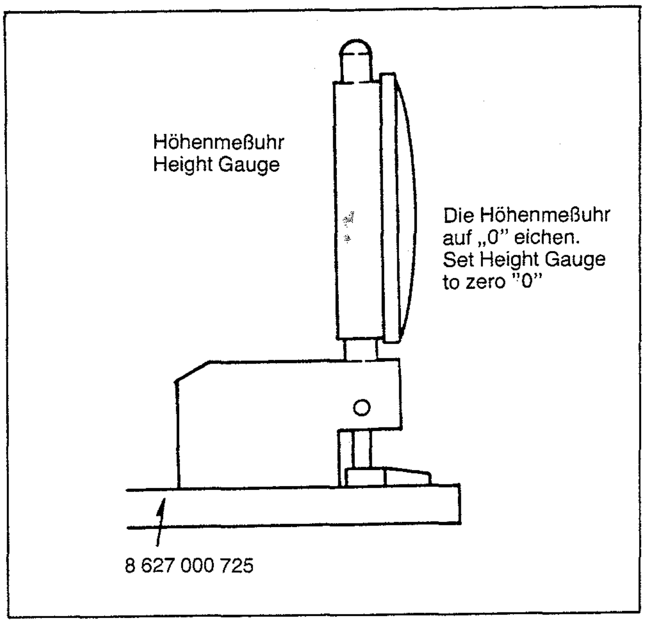

Höhenmeßuhr
Height Gauge
Die Höhenmeßuhr auf „0" eichen.
Set Height Gauge to zero "0"
8 627 000 725

Fig. 44

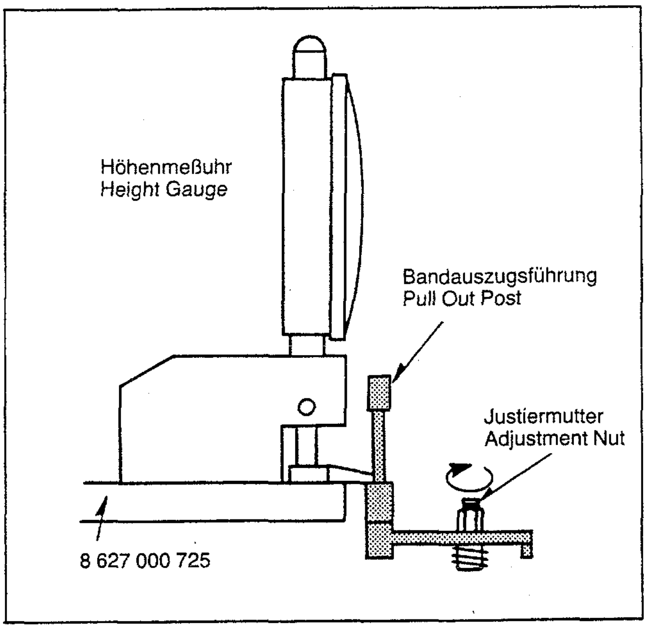

Höhenmeßuhr
Height Gauge
Bandauszugsführung
Pull Out Post
Justiermutter
Adjustment Nut
8 627 000 725

Fig. 45

6. Nach dem Abgleich wird das Kassettenfach wieder installiert (siehe Seite 1-17).
7. Eine Videokassette einschieben und sicherstellen, daß die Kanten des Bandes am oberen oder unteren Ende der Bandführungen P1, P2, P3, P4 sowie an der Bandauszugsführung P5 keine Schlaufen bilden (Fig. 46/47).
8. Sollten sich Schlaufen bilden, die Bandführungen und die Bandauszugsführungen neu einstellen.

6. After the adjustment, install the cassette compartment (see page 1-17).
7. Play back a normal cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the posts P1, P2, P3, P4 and pull out post P5 as shown in Fig. 46/47.
8. If curling appears, readjust each post.

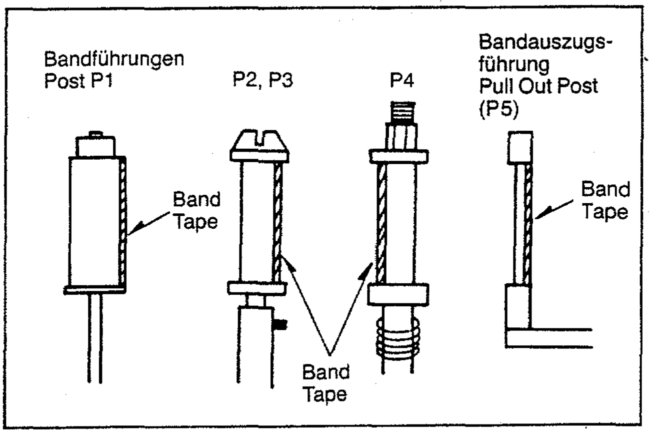

Bandführungen
Post P1
P2, P3
P4
Bandauszugs-führung
Pull Out Post
(P5)
Band
Tape
Band
Tape
Band
Tape

Fig. 46

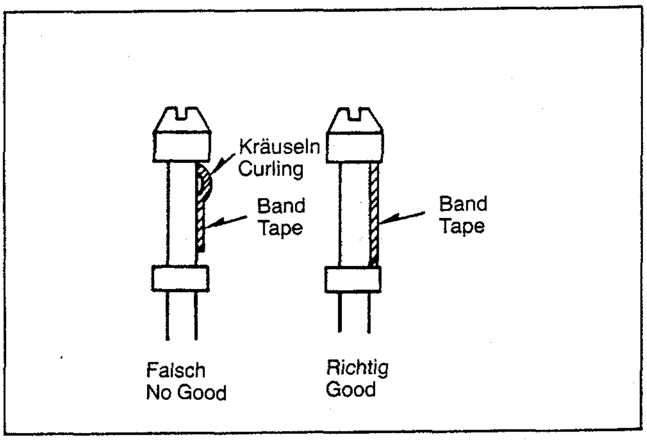

Kräuseln
Curling
Band
Tape
Band
Tape
Falsch
No Good
Richtig
Good

Fig. 47

12. Bandtauschbarkeitsabgleich

Hinweis:

Die nachfolgenden Abgleichpunkte (A-E) für den Bandaustauschbarkeitsabgleich durchführen. Dieser Ableich muß äußerst sorgfältig durchgeführt werden.

A. Überprüfung und Einstellung der P2 und P3 Bandführungen.
B. Neigungseinstellung des A/C-Kopfes.
C. Höheneinstellung des A/C-Kopfes.
D. Azimuteinstellung des A/C-Kopfes.
E. Einstellung der Horizontallage des A/C-Kopfes.

Sollte die Bandaustauschbarkeit nicht einwandfrei sein, die obigen Punkte A-E wiederholen.

A. Überprüfung und Einstellung der P2 und P3 Bandführungen

Benötigtes Werkzeug:

VHS-Testkassette	8 627 000 540
Einstellschraubendreher	8 627 000 544

1. Den Tracking-Regler in die „Fix"-Position drehen. Dann das Oszilloskop mit dem Ausgang des Kopfverstärkers verbinden, siehe Fig. 48. Um ein stabiles Oszillogramm des Kopfverstärkerausgangs auf das Oszilloskop zu bekommen, den Kopfumschaltimpuls als Triggersignal verwenden.
2. Das Testbild der Testkassette abspielen.
3. Wenn die Hüllkurve Beispiel „A" oder „B" in Fig. 49 gleicht, ist eine Justierung des Bandführungsstiftes P2 (Kopfeintritt) notwendig.
4. Den Bandführungsstift P2 mit dem Einstellschraubendreher so einstellen, daß die Hüllkurve im Kopfeintritt flach wird, siehe Fig. 49 „C".
5. Wenn die Hüllkurve Beispiel „D" oder „E" in Fig. 50 gleicht, ist eine Justierung des Bandführungsstiftes P3 (Kopfaustritt) notwendig.
6. Den Bandführungsstift P3 in der gleichen Weise justieren wie P2, so daß die Hüllkurve im Kopfaustritt flach wird, siehe Fig. 50 - „F".

12. Tape Interchangeability Adjustment

Note:

Perform the following procedures for Tape Interchangeability Adjustment to do it correctly and smoothly.

A. Confirmation and Adjustment of P2 and P3 Posts.
B. Tilt Adjustment of A/C Head.
C. Height Adjustment of A/C Head.
D. Azimuth Adjustment of A/C Head.
E. Horizontal Position Adjustment of A/C Head.

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedure from A to E.

A. Confirmation and Adjustment of P2 and P3 Posts

Required Equipment:

VHS Alignment Cassette	8 627 000 540
Post Adjustment Screwdriver	8 627 000 544

1. Set the tracking control into the fix position. And connect the oscilloscope to the output of the Head Amp as shown in Fig. 48. To get a stable waveform of the Head Amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in the Figure below.
2. Play back the alignment tape.
3. If the RF envelope appears like example "A" or "B" in Fig. 49 then adjustment of the tape guide post (P2: Entrance) is necessary.
4. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig. 49 - "C".
5. If the RF envelope appears like example "D" or "E" in Fig. 50, then adjustment of the tape guide post (P3: Exit) is necessary.
6. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig. 50 - "F".

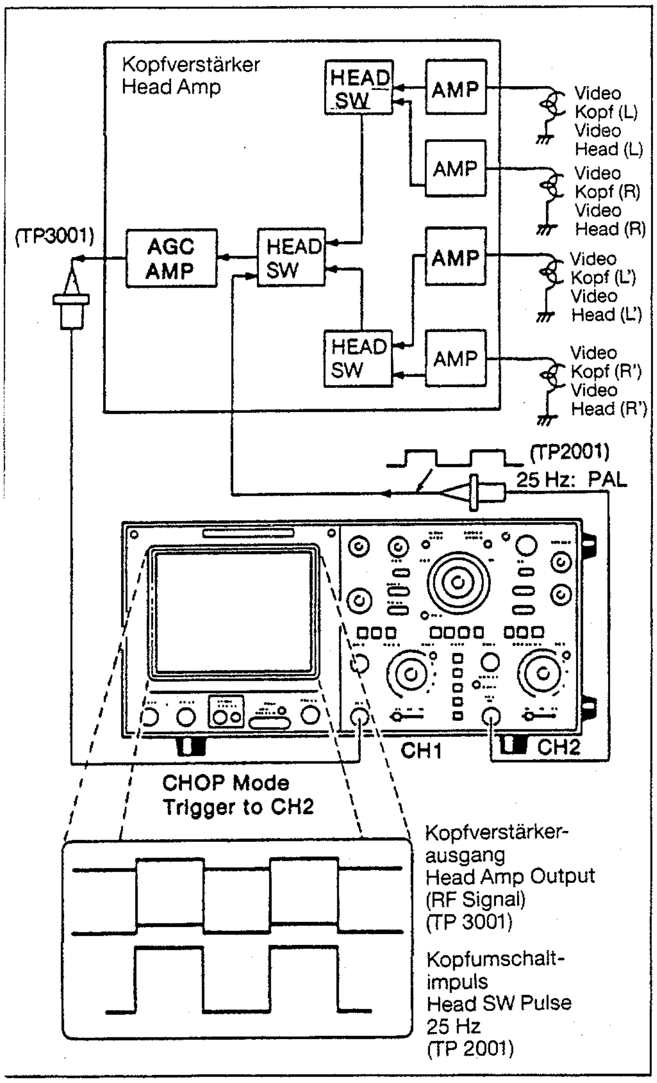

Kopfverstärker
Head Amp
HEAD SW
AMP
AMP
AMP
AMP
HEAD SW
HEAD SW
AGC AMP
Video Kopf (L)
Video Head (L)
Video Kopf (R)
Video Head (R)
Video Kopf (L')
Video Head (L')
Video Kopf (R')
Video Head (R')
(TP3001)
(TP2001)
25 Hz: PAL
CH1
CH2
CHOP Mode
Trigger to CH2
Kopfverstärkerausgang
Head Amp Output
(RF Signal)
(TP 3001)
Kopfumschaltimpuls
Head SW Pulse
25 Hz
(TP 2001)

Fig. 48

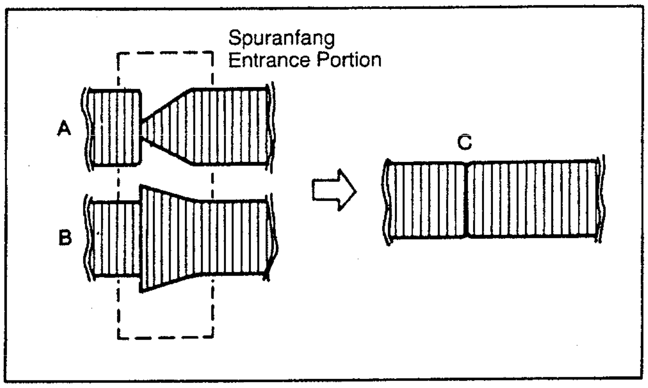

Spuranfang
Entrance Portion
A
B
C

Fig. 49

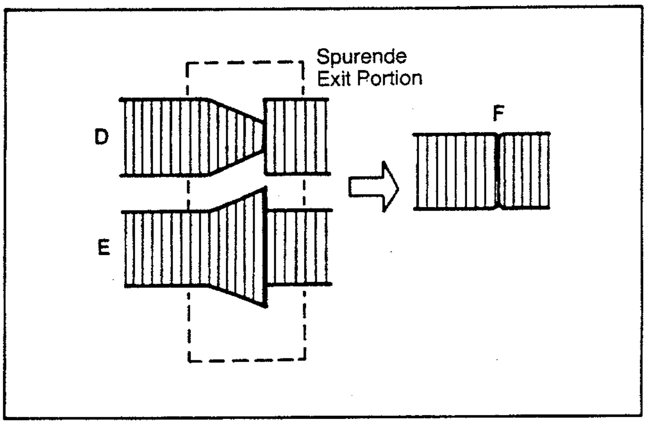

Spurende
Exit Portion
D
E
F

Fig. 50

7. Den Tracking-Regler ganz im Uhrzeigersinn und gegen den Uhrzeigersinn drehen. Die Hüllkurve sollte sich in beiden Fällen ähnlich verhalten, siehe Fig. 51.
8. Den Tracking-Regler auf Maximum einstellen und überprüfen, ob die Hüllkurven-Toleranzen, wie in Fig. 53 gezeigt, eingehalten werden. Ist dies nicht der Fall, müssen die Abgleichpunkte 1 – 7 wiederholt werden.

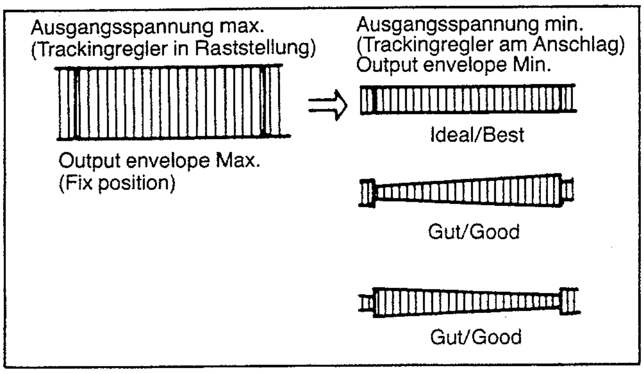

Ausgangsspannung max.
(Trackingregler in Raststellung)
Output envelope Max.
(Fix position)
Ausgangsspannung min.
(Trackingregler am Anschlag)
Output envelope Min.
Ideal/Best
Gut/Good
Gut/Good

Fig. 51

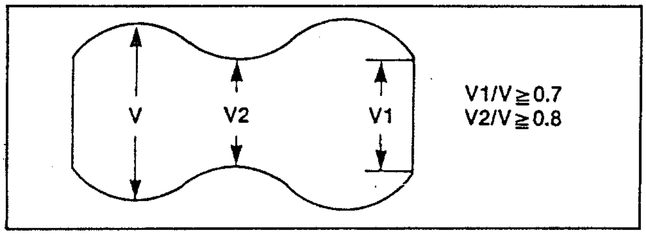

V
V2
V1
V1/V≧0.7
V2/V≧0.8

Fig. 53

B. Neigungseinstellung des A/C-Kopfes

Diese Einstellung sollte nach dem Auswechseln des A/C-Kopfes und der Andruckrolle ausgeführt werden.

1. Die Testkassette abspielen und überprüfen, ob das Band zwischen dem unteren und oberen Begrenzer der P4-Bandführung läuft. Sollte Welligkeit am oberen oder unteren Rand des Bandes auftreten, die Neigung des A/C-Kopfes durch Drehen der Schraube (B) hinter dem A/C-Kopf korrigieren.
2. Zusätzlich ist bei dieser Einstellung auch der Bandlauf an der Bandauszugsführung P5 mit dem Mechaniker-Spiegel zu kontrollieren. Sollten sich Falten bilden, die Einstellung Punkt 11 auf den Seiten 1-26 und 1-27 überprüfen.

Hinweis 1:
Um die Kontrolle auf Bandwelligkeit zu erleichtern, sind auf der Platine vor dem A/C-Kopf weiße Streifen aufgedruckt, die sich auf der Bandoberfläche spiegeln.

Hinweis 2:
Nach dem Neigungsabgleich des A/C-Kopfes ist ein Höhenabgleich des A/C-Kopfes notwendig.

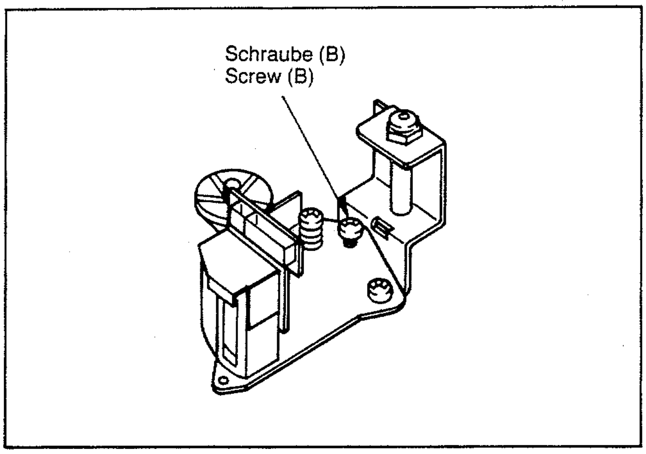

Schraube (B)
Screw (B)

Fig. 54

7. Turn the Tracking VR fully clockwise and counter clockwise. The output envelope should vary nearly parallel with other condition as shown in Fig. 51.
8. Turn the Tracking VR and adjust for maximum RF envelope. If the RF envelope does not meet these specifications, V1/V ≥ = 0.7, V2/V ≥ = 0.8, then repeat steps 1 – 7 again.

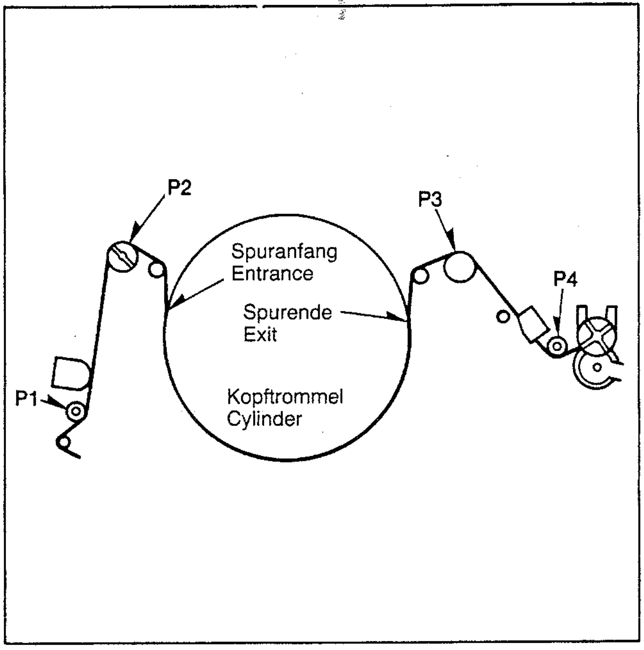

P2
P3
P4
P1
Spuranfang
Entrance
Spurende
Exit
Kopftrommel
Cylinder

Fig. 52

B. Tilt Adjustment of A/C Head

This procedure should be performed after replacing the A/C head and pressure roller.

1. Play back the beginning portion of blank cassette tape and confirm that the tape runs between lower and upper limiter of P4 post. If there is waving or frilling in the lower edge or top edge of the tape, correct the tilt of the A/C head by turning the screw (B) located behind the A/C head.
2. When making this adjustment, tape running should be checked at the pullout post P5 by means of a mechanical mirror. If any curling appears, the adjustment of para. 11 (pages 1-26 and 1-27) should be checked again.

Note 1:
In order to make it easier to recognize waving or frilling, white lines have been printed on the CBA before the A/C head. These lines reflect on the tape surface.

Note 2:
After tilt adjustment of A/C head, height adjustment of A/C head is required.

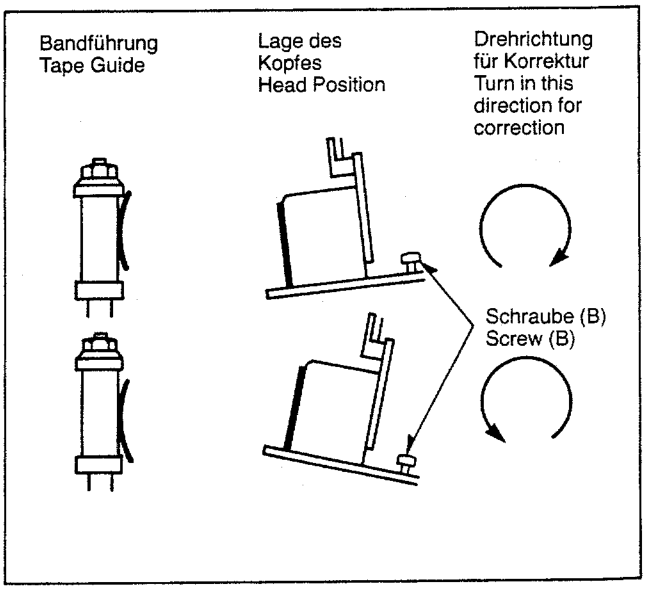

Bandführung
Tape Guide
Lage des
Kopfes
Head Position
Drehrichtung
für Korrektur
Turn in this
direction for
correction
Schraube (B)
Screw (B)

Fig. 55

C. Höheneinstellung des A/C-Kopfes

Hinweis:

Diese Einstellung sollte nur dann ausgeführt werden, wenn der A/C-Kopf ausgewechselt oder die Neigung des A/C-Kopfes eingestellt wurde.

Benötigtes Werkzeug:
Mechanikerspiegel 8 627 000 363
Steckschlüssel 7 mm

1. Während das Band läuft, die untere Kante des A/C-Kopfes mit dem Mechanikerspiegel beobachten und überprüfen, ob die untere Kante des Bandes entlang der unteren Kante des A/C-Kopfes läuft. Ist dies nicht der Fall, mit der Mutter (C) hinter dem A/C-Kopf (Fig. 56) die Höhe justieren. Die Mutter (C) im Uhrzeigersinn drehen, um den Kopf zu senken und entgegen dem Uhrzeigersinn, um ihn zu heben.

C. Height Adjustment of A/C Head

Note:

This procedure should be performed only when the A/C Head is replaced.

Required equipment:
Mechanical Mirror 8 627 000 363
Nut Driver (Purchase locally) 7 mm

1. With the tape running, lock at the lower edge of the control head by using the Mechanical Mirror and check if the lower edge of tape runs along the lower edge of control head.
   If it doesn't slightly adjust the height by means of the nut (C) behind the A/C Head (Fig. 56).
   Turn the nut (C) clockwise to lower the head, and counter-clockwise to raise it.

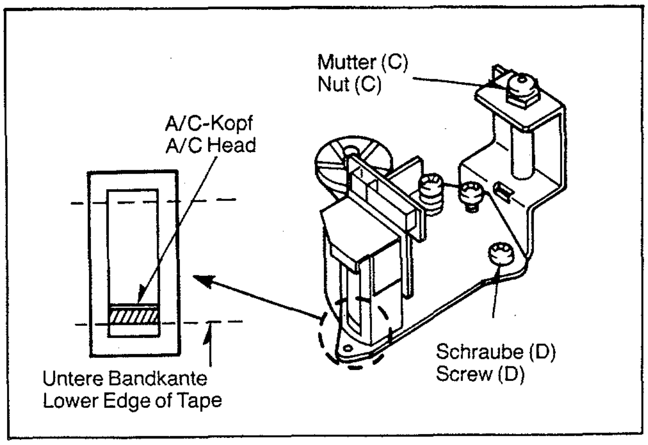


Fig. 56

D. Azimuteinstellung des A/C-Kopfes

Hinweis:

Diese Einstellung ist nur durchzuführen, wenn der A/C-Kopf ausgewechselt wurde und die Bandführungen neu justiert wurden.

Benötigtes Werkzeug:
VHS-Testkassette 8 627 000 540
Kreuzschlitzschraubendreher

1. Das Oszilloskop mit dem Audioausgang (AUDIO OUT L) verbinden.
2. Den Audio-Teil der Testkassette wiedergeben (Normal-Tonspur).
3. Die Schraube (D) so einstellen, daß der Ausgangspegel das Maximum erreicht.

D. Azimuth Adjustment of A/C Head

Note:

This procedure should be performed only when the A/C Head is replaced and posts are readjusted.

Required equipment:
VHS Alignment Cassette 8 627 000 540

1. Connect the oscilloscope to the audio output on the rear panel.
2. Play back the 2nd portion (Normal Audio) of the alignment tape.
3. Adjust the screw (D) so that the output level becomes maximum.

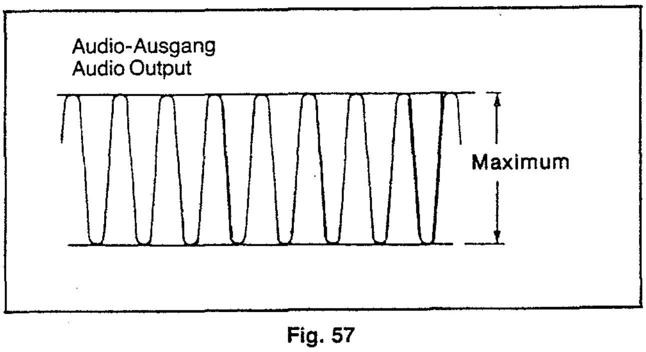


Fig. 57

E. Einstellung der Horizontallage des A/C-Kopfes

Hinweis:

Diese Einstellung sollte nur dann ausgeführt werden, wenn der A/C-Kopf ausgewechselt wurde, sowie nach dem Bandaustauschbarkeitsabgleich.

Benötigtes Werkzeug:
Spezial-Schraubendreher 8 627 000 731
VHS-Testkassette 8 627 000 540

E. Horizontal Position Adjustment of A/C Head

Note:

This procedure should be performed only the A/C head is replaced, and after performing the tape interchangeability adjustment:

Required equipment:
H-Position Adjustment Screwdriver 8 627 000 731
VHS-Alignment Cassette 8 627 000 540

1. Den Tracking-Regler in die Raststellung drehen (FIX-Position).
2. Das Oszilloskop an TP 3001 und TP 2001 (Trigger) anschließen, siehe Fig. 48.
3. Die Testkassette einlegen und abspielen.
4. Die Horizontallage des A/C-Kopfes so einstellen, daß das HF-Signal das Maximum erreicht.

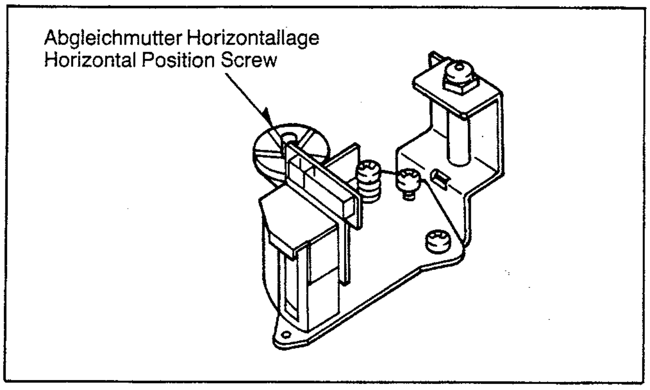

Abgleichmutter Horizontallage
Horizontal Position Screw

Fig. 58

13. Montage und Einstellung der Laufwerkmechanik

Die Funktion dieses Laufwerkes wird gewährleistet durch das Zusammenspiel von Betriebsartenwahlschalter und der Systemsteuerschaltung. Daraus folgt, daß die Stellung des Betriebsartenwahlschalters und der Zahnräder zueinander über sämtliche Bewegungen der Hebel und anderen mechanischen Teile entscheidet. Wenn die Zahnräder nicht korrekt montiert wurden, wird das Gerät die Kassette wieder auswerfen oder die Mechanik wird abrupt gestoppt. Dabei können mechanische oder auch elektrische Teile beschädigt werden. Der generelle mechanische Zustand in der Draufsicht und Unteransicht sind in Fig. 60 und 61 gezeigt. Dieser mechanische Abgleich wird in der Betriebsart STOP (Zwischenladestellung) durchgeführt. Die Details des mechanischen Zustands werden später beschrieben.

Hinweis:

Zur Montage der Laufwerkteile der unteren Ebene müssen die darüberliegenden Ebenen demontiert werden.

1. Set the Tracking Control VR to the centre fix position.
2. Connect the oscilloscope to the output of Head Amp. (Refer to Fig. 48).
3. Play back the alignment tape.
4. Adjust the Horizontal Position Screw of A/C Head so that the RF signal becomes maximum level.

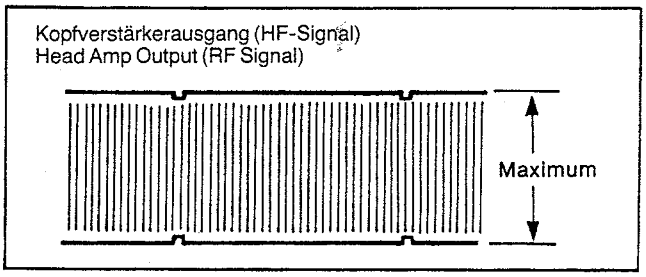

Kopfverstärkerausgang (HF-Signal)
Head Amp Output (RF Signal)
Maximum

Fig. 59

13. Assembly and Adjustment Procedures of Mechanism

The mechanism of this model is mostly engaged to the System Control Circuit, through the mode select switch.

Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.

If these parts are not fixed properly, the unit will be unloaded or compulsorily stopped.

And it will result in being damaged at any mechanical or electrical parts. The overall mechanical condition of bottom and top view are shown in Fig. 60 and Fig. 61. This mechanical adjustment (intermediate loading) is performed in STOP mode.

The detail of mechanical condition will be described later.

Note:

Before assembling tape deck parts of the lower plane, the upper planes must have been disassembled.

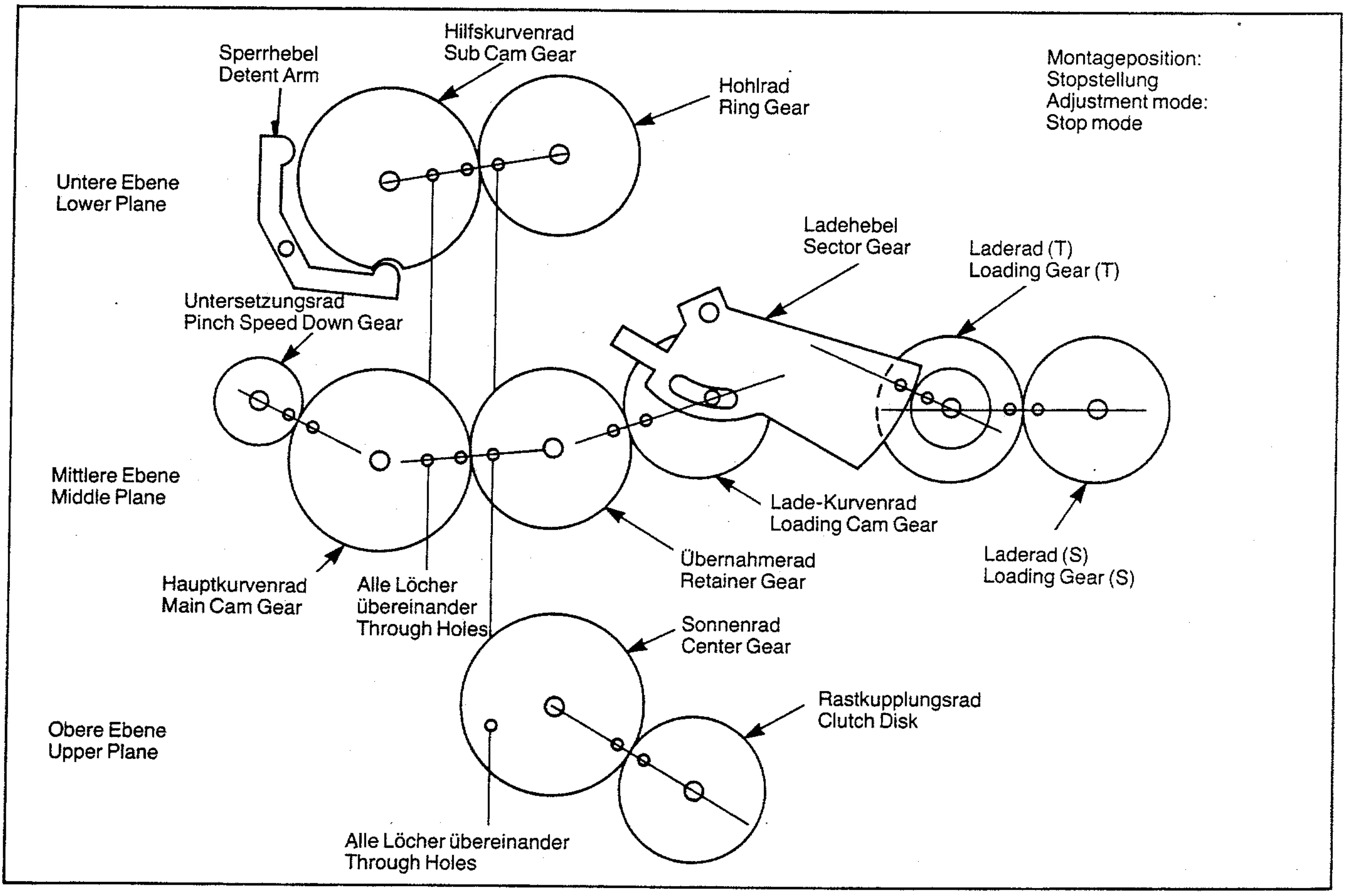

Sperrhebel
Detent Arm
Hilfskurvenrad
Sub Cam Gear
Hohlrad
Ring Gear
Montageposition:
Stopstellung
Adjustment mode:
Stop mode
Untere Ebene
Lower Plane
Ladehebel
Sector Gear
Laderad (T)
Loading Gear (T)
Untersetzungsrad
Pinch Speed Down Gear
Mittlere Ebene
Middle Plane
Lade-Kurvenrad
Loading Cam Gear
Übernahmerad
Retainer Gear
Laderad (S)
Loading Gear (S)
Hauptkurvenrad
Main Cam Gear
Alle Löcher
übereinander
Through Holes
Sonnenrad
Center Gear
Rastkupplungsrad
Clutch Disk
Obere Ebene
Upper Plane
Alle Löcher übereinander
Through Holes

Fig. 60

inweis:
as Kassettenfach ausbauen.
ie Montageposition des Lauf-
erks für die Montage der Zahn-
äder etc. ist die Stop-Stellung
Zwischenladestellung). Die
top-Stellung wird erreicht, wenn
an die große Riemenscheibe
nksherum dreht, bis der mecha-
ische Anschlag erreicht ist. Zwi-
chendurch den Wechselschie-
er bzw. den Anker des Elektro-
agneten betätigen.
un die große Riemenscheibe
echtsherum drehen, bis sie das
rste Mal frei läuft. Den Wech-
elschieber bzw. den Anker des
lektromagneten betätigen und
ie Riemenscheibe rechtsherum
eiterdrehen bis sie das zweite
al frei läuft. Jetzt ist die Monta-
eposition für alle Zahnräder,
urvenräder und Hebel erreicht.
Vechselschieber bzw. den
nker des Elektromageneten sie-
e Seite 1-16, Fig. 19 und 20).

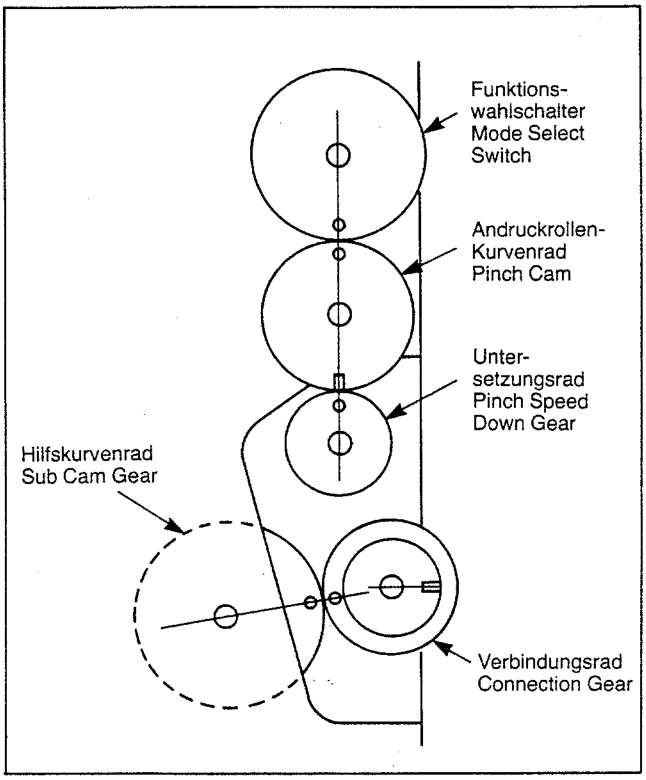

Funktions-wahlschalter
Mode Select Switch
Andruckrollen-Kurvenrad
Pinch Cam
Unter-setzungsrad
Pinch Speed Down Gear
Hilfskurvenrad
Sub Cam Gear
Verbindungsrad
Connection Gear

Fig. 61

Note:
Remove the Cassette Compartment. Before assembling gears and other parts, the tape deck has to be placed in stop position. This is done as follows: turn the Center pulley as far as possible to the left (mechanical stop). Actuate the change lever or solenoid while doing so. Turn the Center pulley to the right until it moves freely for the first time, actuate the change lever and turn the Center pulley farther to the right until is moves freely for the second time. The tape deck is now in assembly position for all gears, cam gears, and levers. (Change lever or solenoid see page 1-16, Fig. 19 + 20).

4. Montage des Hilfskurvenrades, des Hohlrades und des Sperrhebels (untere Ebene)

Das Hohlrad so einsetzen, daß die Löcher dieses Rades genau mit den Löchern im Chassis fluchten, siehe Fig. 62.
Das Hilfskurvenrad so einsetzen, daß das Loch dieses Rades mit dem Loch im Chassis und gleichzeitig das kleine Loch des Hilfskurvenrades mit dem kleinen Loch des Hohlrades fluchtet.
Den Sperrhebel einbauen.

inweis:
ur Montage der Laufwerkteile für die untere Ebene müssen die rüberliegenden Ebenen demontiert sein!

5. Montage des Hauptkurvenrades und des Untersetzungsrades (mittlere Ebene)

Das Untersetzungsrad von der Oberseite des Chassis einsetzen. (Das Andruckrollen-Kurvenrad muß ausgebaut sein.)
Das Hauptkurvenrad auf das Hilfskurvenrad setzen, so daß das kleine Loch des Hauptkurvenrades mit dem kleinen Loch des Untersetzungsrades fluchtet.
Das große Loch des Hauptkurvenrades fluchtet mit dem großen Loch des Hilfskurvenrades, siehe Fig. 63.

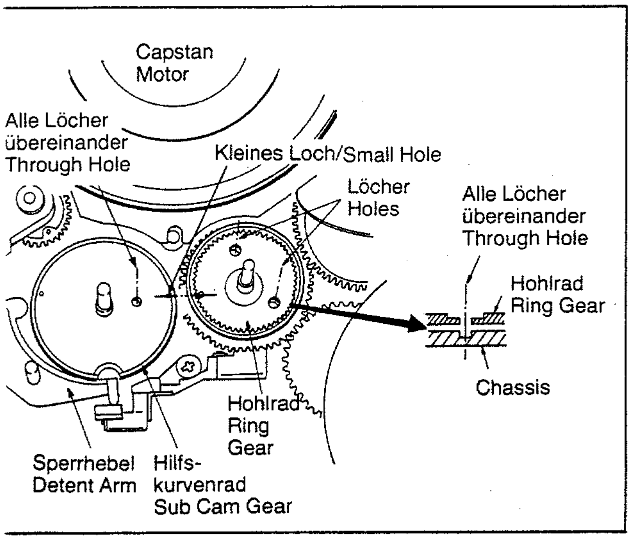

Capstan Motor
Alle Löcher übereinander
Through Hole
Kleines Loch/Small Hole
Löcher
Holes
Alle Löcher übereinander
Through Hole
Hohlrad
Ring Gear
Chassis
Hohlrad
Ring Gear
Sperrhebel
Detent Arm
Hilfs-kurvenrad
Sub Cam Gear

Fig. 62

14. Assembly Procedure of Sub Cam Gear, Ring Gear and Detent Arm (lower Plane)

1. Install the Ring Gear so that the hole of Ring Gear is exactly in line with the hole of chassis as shown in Fig. 62.
2. Install the Sub Cam Gear so that the hole of Sub Cam Gear is exactly in line with the hole of chassis, at the same time, the small hole (located just outside of large hole) of Sub Cam Gear is exactly in line with the hole of Ring Gear.
3. Install the Detent Arm.

Note:
Before assembling tape deck parts of the lower plane, the upper planes must have been disassembled.

15. Assembly Procedures of Main Cam Gear and Pinch Speed Down Gear (middle Plane)

1. Install the Pinch Speed Down Gear from top side of chassis.
2. Install the Main Cam Gear on to the Sub Cam Gear so that the small hole of Main Cam Gear is exactly in line with the small hole Pinch Speed Down Gear.
   And the large hole of Main Cam Gear is exactly in line with the large hole of Sub Cam Gear as shown in Fig. 63.

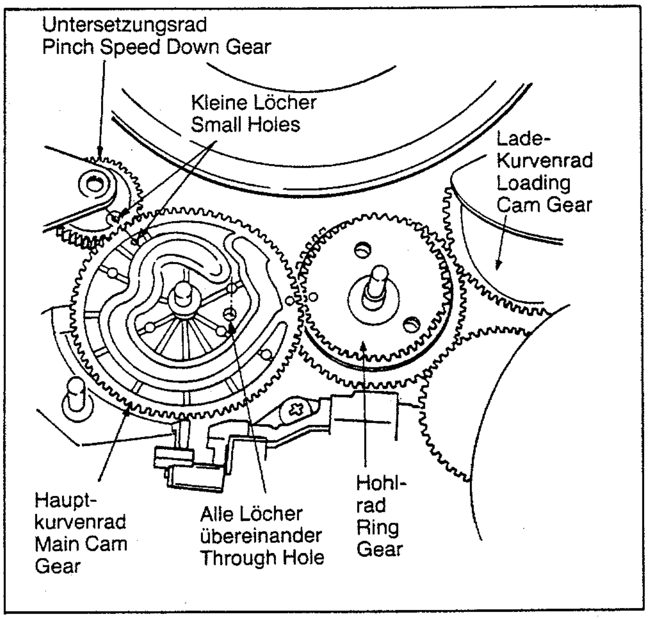

Untersetzungsrad
Pinch Speed Down Gear
Kleine Löcher
Small Holes
Lade-Kurvenrad
Loading Cam Gear
Haupt-kurvenrad
Main Cam Gear
Alle Löcher übereinander
Through Hole
Hohl-rad
Ring Gear

Fig. 63

16. Montage des Ladekurvenrades und des Übernahmerades (mittlere Ebene)

1. Das Übernahmerad mit den Planetenrädern so in das Hohlrad einsetzen, daß das kleine Loch des Übernahmerades mit dem kleinen Loch des Hauptkurvenrades fluchtet und gleichzeitig die Löcher des Übernahmerades mit den Löchern des Hohlrades in einer Linie liegen (Fig. 65).
2. Den Hilfsladehebel mit einer Hand spannen (in Richtung A/C-Kopf drücken) und festhalten (Fig. 64). Nun das Lade-Kurvenrad so einsetzen, daß das kleine äußere Loch mit dem mittelgroßen Loch des Übernahmerades fluchtet. Den Hilfsladehebel jetzt loslassen (Fig. 65).

16. Assembly Procedures of Loading Cam Gear and Retainer Gear (middle Plane)

1. Install the Loading Cam Gear so that the end of Sub Loading Arm comes to the lift (A) of Loading Cam Gear as shown in Fig. 64.
2. Install the Retainer Gear (press towards A/C head) on to the Ring Gear (Fig. 64) so that the hole of Retainer Gear is exactly in line with the hole of Main Cam Gear, at this time, this hole of Retainer Gear also is exactly in line with the hole of Ring Gear. At the same time, another hole of Retainer Gear is exactly in line with the hole of Loading Cam Gear as shown in Fig. 65.

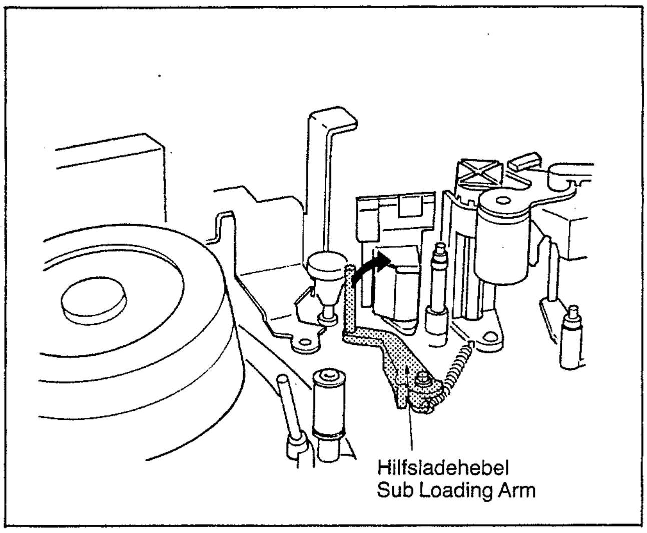

Hilfsladehebel
Sub Loading Arm

Fig. 64

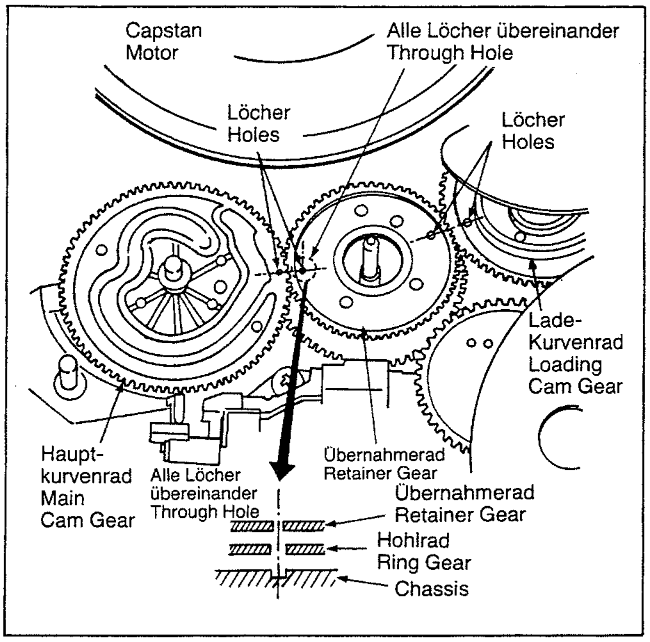

Capstan
Motor
Alle Löcher übereinander
Through Hole
Löcher
Holes
Löcher
Holes
Lade-
Kurvenrad
Loading
Cam Gear
Haupt-
kurvenrad
Main
Cam Gear
Alle Löcher
übereinander
Through Hole
Übernahmerad
Retainer Gear
Übernahmerad
Retainer Gear
Hohlrad
Ring Gear
Chassis

Fig. 65

17. Montage des Sonnenrades und des oberen Rastkupplungsrades (obere Ebene)

1. Das Sonnenrad so in das Übernahmerad einsetzen, daß die Löcher des Sonnenrades mit den Löchern des Übernahmerades eine Linie bilden. Nun das obere Rastkupplungsrad einbauen und darauf achten, daß das kleine Loch des Rastkupplungsrades mit dem dazu gehörenden Loch des Sonnenrades eine Linie bildet (Fig. 66).
2. Die große Riemenscheibe einsetzen.

17. Assembly Procedures of Center Gear (upper Plane)

1. Install the Center Gear on to the Retainer Gear.
   So that the hole of Center Gear is exactly in line with the hole of Retainer Gear, at this time, another hole of Center Gear is exactly in line with the small hole of Clutch Disk, then insert the cut washer (Fig. 66).
2. Install the Center Pulley.

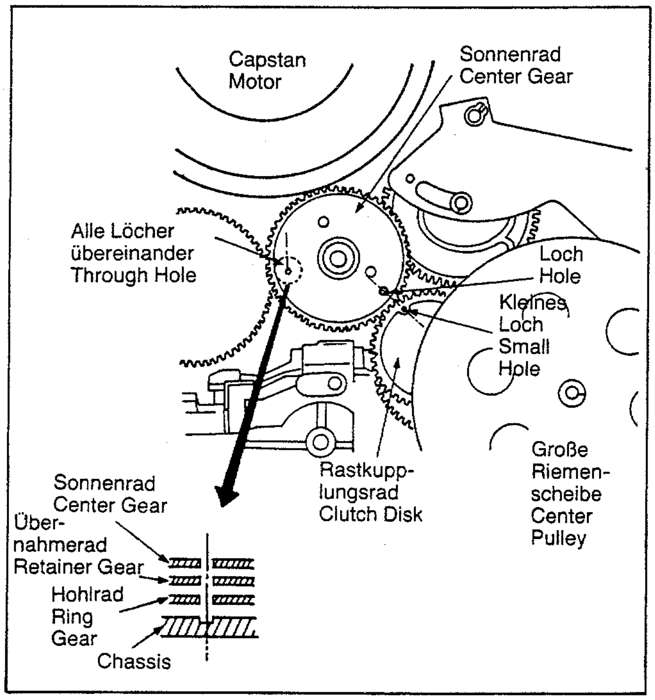

Capstan
Motor
Sonnenrad
Center Gear
Alle Löcher
übereinander
Through Hole
Loch
Hole
Kleines
Loch
Small
Hole
Sonnenrad
Center Gear
Über-
nahmerad
Retainer Gear
Hohlrad
Ring
Gear
Chassis
Rastkupp-
lungsrad
Clutch Disk
Große
Riemen-
scheibe
Center
Pulley

Fig. 66

18. Montage der Haupthebel-Einheit und des Hauptkurvenrad-Hebels

1. Den Hauptkurvenrad-Hebel so einbauen, daß der Stift des Hauptkurvenrad-Hebels sich in der Nut des Hauptkurvenrades befindet. Den Hauptkurvenrad-Hebel sichern.
2. Die Haupthebel-Einheit einbauen und mit 2 Sicherungsscheiben sichern. Beim Einbau darauf achten, daß alle Stifte sich in den Aussparungen oder an den Hebelarmen befinden (Fig. 67).

18. Assembly Procedures of Main Lever (1) Unit and Cam Follower Arm Unit

1. Install the Cam Follower Arm Unit so that the pin of Cam Follower Arm inserts in the groove of Main Cam Gear, then insert a retaining ring.
2. Install the Main Lever Unit and then insert the cut washers. Make sure that all pins are inserted in the recesses or the lever arms (Fig. 67).

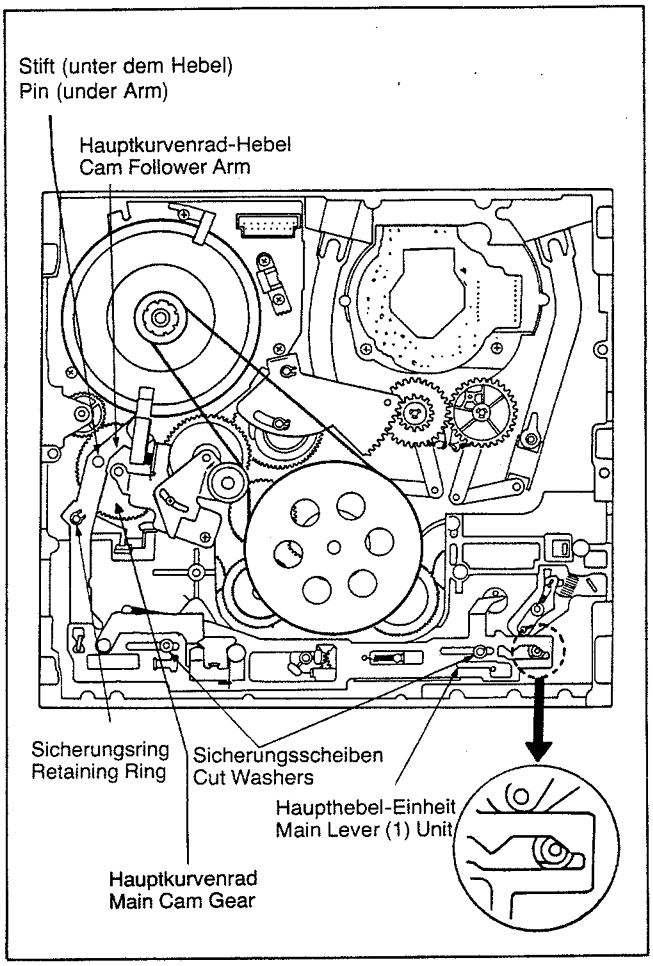


Fig. 67

19. Montage des Laderades (T), des Laderades (S), des Ladehebels, der Spannrolle und des Capstanrotor-Bremshebels

1. Das Laufwerk befindet sich immer noch in der Stop-Position. Die Laderäder (S und T) so einsetzen, daß die Löcher am Zahnkranz beider Laderäder sich in der Mitte gegenüberstehen.
2. Den Ladehebel einbauen und darauf achten, daß die Markierung an der Innenseite des kleinen Zahnkranzes des T-Laderades mit dem Markierungsloch des Ladehebels eine Linie bildet. Den Ladehebel sichern.
3. Den Capstanrotor-Bremshebel einbauen und festschrauben. Dann den Zahnriemen auflegen und die Spannrolle montieren. Nun mit der Spannrolle die mechanische Spannung des Zahnriemens einstellen (siehe Seite 1-23).

19. Assembly Procedures of Loading Gear (T), Loading Gear (S), Sector Gear, Tension Roller Unit and SS Brake Arm Unit

1. Set the P2 and P3 posts to unloading position, then install the Loading Gear (T) and (S) so that the hole of Loading Gear (T) is exactly in line with the hole of Loading Gear (S).
2. Install the Sector Gear so that the hole of Sector Gear is exactly in line with the projection mark of Loading Gear (T). Then insert the retaining rings.
3. Install the Tension Roller Unit and SS Brake Unit, then tighten the screws, (see page 1-23, Tension Adjustment of Timing Belt). Place the timing belt and install the tension roller unit.
Now adjust the mechanical tension of the timing belt by means of the tension roller unit (page 1-23).

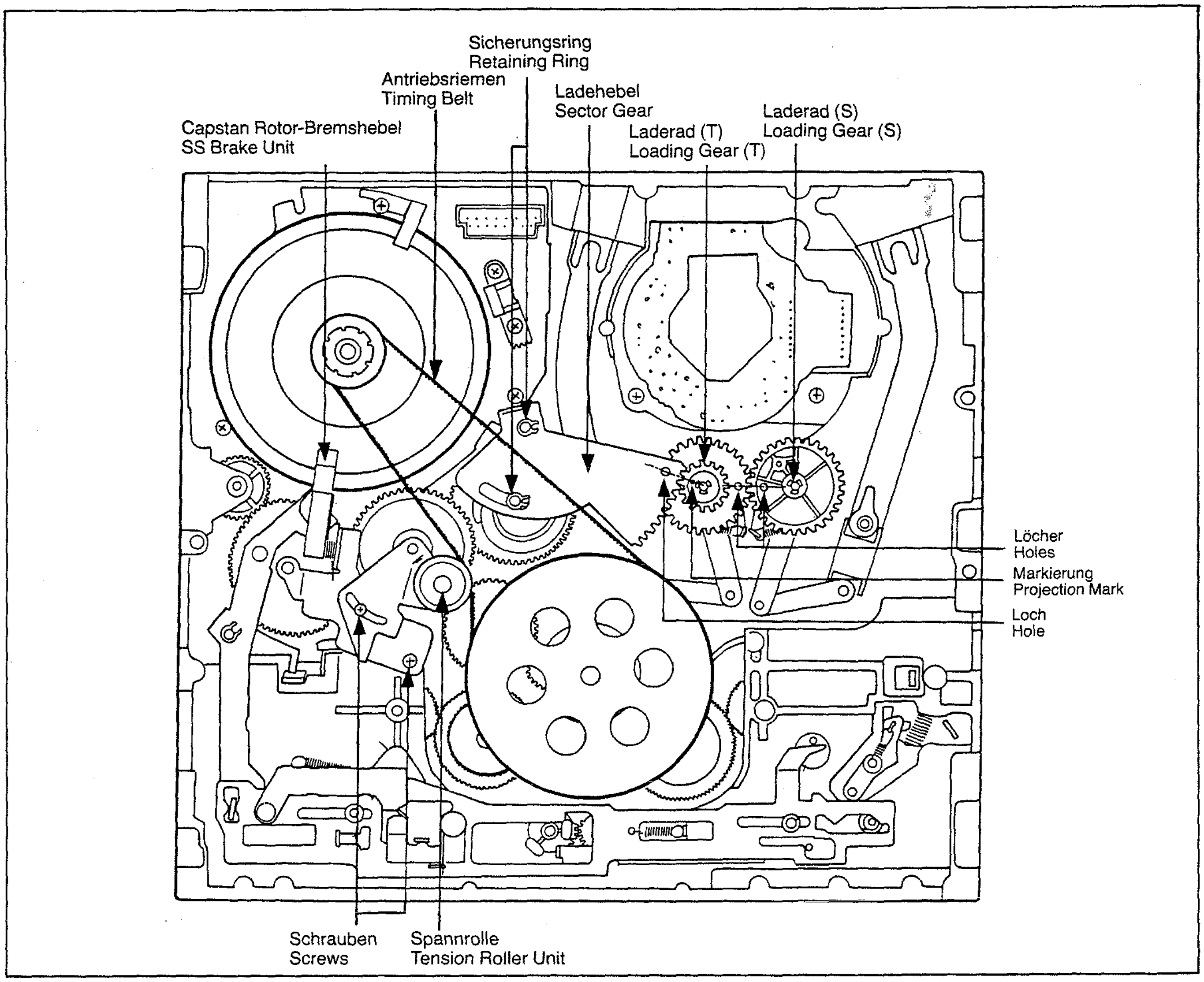

Sicherungsring
Retaining Ring
Antriebsriemen
Timing Belt
Ladehebel
Sector Gear
Laderad (S)
Loading Gear (S)
Capstan Rotor-Bremshebel
SS Brake Unit
Laderad (T)
Loading Gear (T)
Löcher
Holes
Markierung
Projection Mark
Loch
Hole
Schrauben
Screws
Spannrolle
Tension Roller Unit

Fig. 68

20. Montage des Verbindungsrades

Hinweis:

Vor der Montage muß das Hilfskurvenrad in der korrekten Position sein (Stop-Stellung).

1. Das Verbindungsrad so einbauen, daß das kleine Loch dieses Rades mit dem kleinen Loch des Hilfskurbenrades fluchtet (Fig. 69).

20. Assembly Procedures of Connection Gear

Note:

Before this assembling, Sub Cam Gear position (and positon of bottom side gears) must be in correct positions as described before.

1. Install the connection gear so that the small hole of connection gear is exactly in line with the small hole of Sub Cam Gear as shown in Fig. 69.

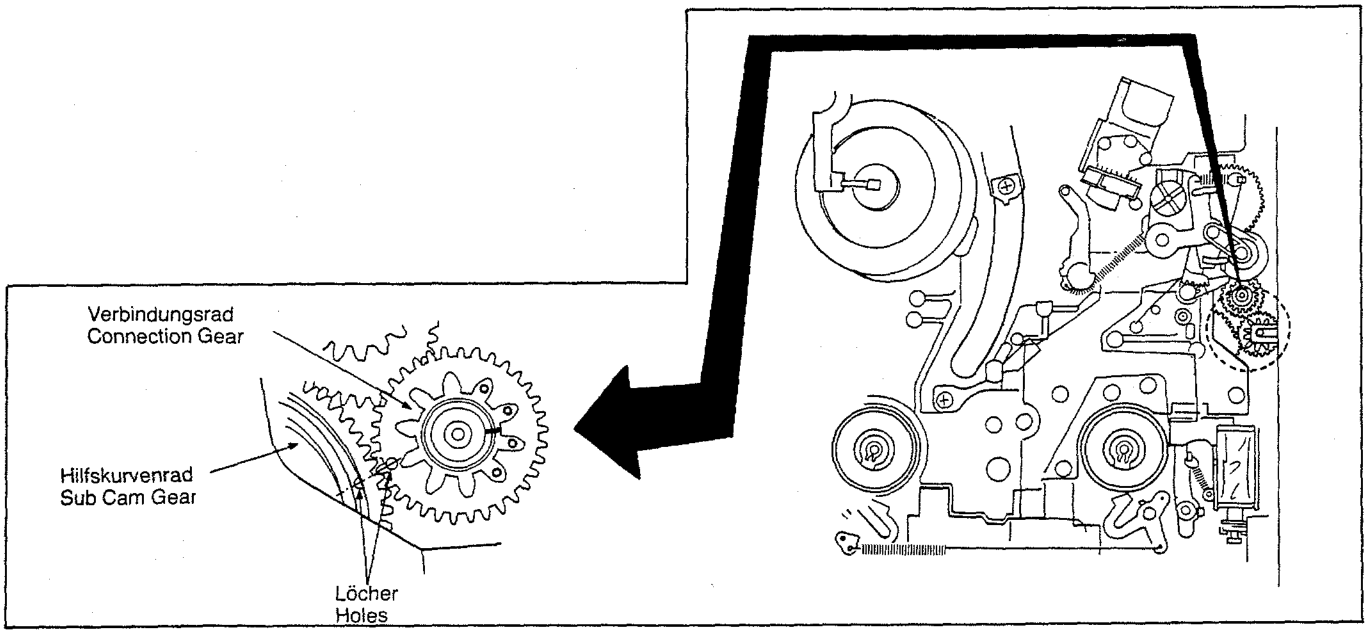

Verbindungsrad
Connection Gear
Hilfskurvenrad
Sub Cam Gear
Löcher
Holes

Fig. 69

21. Montage des Betriebsartenwahlschalters und des Zahnhebels

1. Den Betriebsartenwahlschalter einsetzen und festschrauben. Dann die Lötanschlüsse mit der Platine verlöten. Das kleine Loch am Zahnkranz muß auf den Haltestift des Andruckrollen-Kurvenrades zeigen.
2. Um den Zahnhebel zu montieren, muß zuerst das Laufwerk in die **EJECT**-Stellung gebracht werden. Dazu den Wechselschieber (auf der Unterseite) oder den Anker des Elektromagneten (auf der Oberseite) betätigen, um die Sperre zu entriegeln. Nun die große Riemenscheibe linksherum drehen, bis die Mechanik des Laufwerkes voll in der „Eject"-Stellung steht. Evtl. den Wechselschieber bzw. den Anker des Elektromagneten ein zweites Mal betätigen.
3. Den Zahnhebel auf den Andruckrollenhaltestift schieben. Den P5-Arm nicht spannen. Die mit einem kleinen Loch gekennzeichnete Zahnlücke am Zahnhebel über den 1. Zahn des P5-Arms schieben (Fig. 70).
4. Das Laufwerk wieder in die **STOP**-Stellung bringen. Dazu die große Riemenscheibe rechtsherum drehen, bis sie das erste Mal frei läuft. Den Wechselschieber bzw. den Anker des Elektromagneten betätigen und die Riemenscheibe rechtsherum weiterdrehen, bis sie das zweite Mal frei läuft.

22. Montage des Andruckrollen-Kurvenrades und der Andruckrollen-Einheit

1. Das Andruckrollen-Kurvenrad auf den Haltestift schieben. Den P5-Arm spannen (von Hand), und das Kurvenrad ganz auf den Haltestift schieben. Dabei muß die Lochmarkierung des Kurvenrades mit dem Loch des Betriebsartenwahlschalters fluchten. Das Loch des Untersetzunsrades liegt dann in einer Linie mit der Nasenmarkierung in der Aussparung oberhalb des Zahnkranzes des Andruckrollen-Kurvenrades (Fig. 71).
2. Die Andruckrollen-Einheit auf den Andruckrollenhaltestift schieben. Andruckrollen-Kurvenrad und Andruckrollen-Einheit mit der dazu gehörenden Kappe sichern (Fig. 71).
3. Das Kassettenfach einbauen (siehe Seite 1-17, Montage des Kassettenfaches).

21. Assembly Procedures of Mode Select Switch and P5 Pull out Sector Gear

1. Install the Mode Select Switch and tighten the screw. Then solder the soldering portions onto the CBA. The small hole on the gear must point towards the fixing pin of the pinch cam.
2. In order to mount the pull out sector gear, the tape deck must be put in **EJECT** position. To do so, actuate the change lever (bottom side) or the solenoid (on top) to release the lock. Then turn the center pulley counterclockwise until the tape deck mechanism is fully in "Eject" position. If necessary, actuate the change lever or the solenoid for a second time.
3. Install the P5 Pull Out Sector Gear so that hole of P5 Pull Out Sector Gear is exactly in line with the tip of edge at P5 gear as shown in fig. 70.
4. Put the tape deck back in **STOP** position. To do so, turn the center pulley clockwise until it turns freely for the first time. Actuate the change lever or the solenoid and keep on turning the center pulley clockwise until it turns freely for the second time.

22. Assembly Procedures of Pinch Cam and Pressure Roller Unit

1. Install the Pinch Cam so that the edge of P5 Arm comes into the Rift (A) Pinch Cam and Projection of Pinch Cam is exactly in line with the hole of Pinch Speed Down Gear, at this time, the hole of Mode Select Switch is exactly in line with the hole of Pinch Cam as shown in Fig. 71.
2. Install the Pressure Roller Unit, then install the Pinch Cam Cap.
3. Install the cassette compartment (see page 1-17, Assembly of cassette compartment).

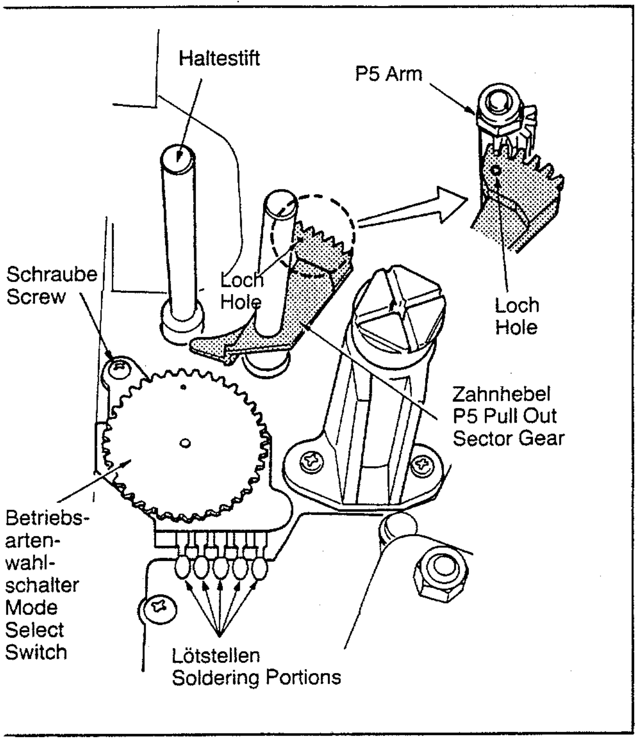

Haltestift
P5 Arm
Schraube
Screw
Loch
Hole
Loch
Hole
Zahnhebel
P5 Pull Out
Sector Gear
Betriebs-
arten-
wahl-
schalter
Mode
Select
Switch
Lötstellen
Soldering Portions

Fig. 70

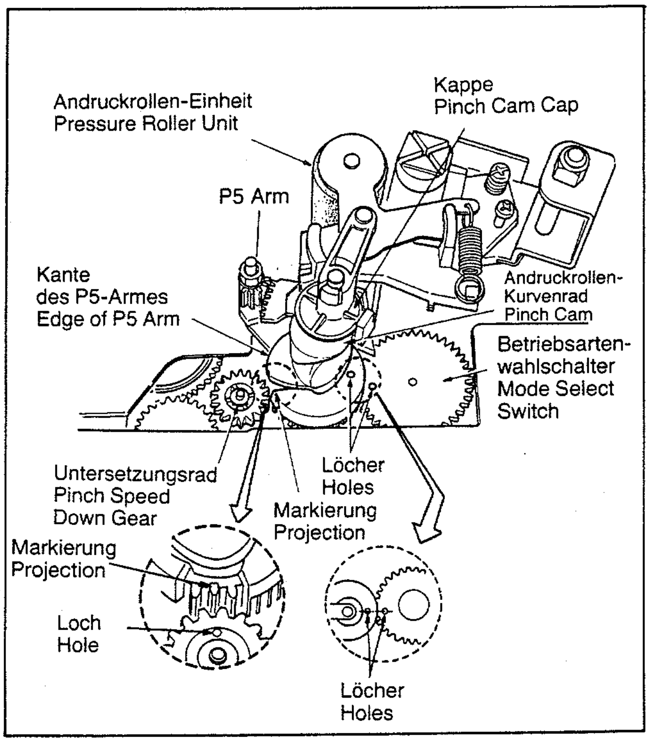

Andruckrollen-Einheit
Pressure Roller Unit
Kappe
Pinch Cam Cap
P5 Arm
Kante
des P5-Armes
Edge of P5 Arm
Andruckrollen-
Kurvenrad
Pinch Cam
Betriebsarten-
wahlschalter
Mode Select
Switch
Untersetzungsrad
Pinch Speed
Down Gear
Löcher
Holes
Markierung
Projection
Markierung
Projection
Loch
Hole
Löcher
Holes

Fig. 71

linweis:
lach Beendigung der Montagearbeiten die Mechanik des Laufwer-es von Hand (!) auf alle Funktionen überprüfen.

Note:
After all assembly works have been finished, confirm by hand(!) that all mechanical functions of the tape deck are working properly.

Elektrischer Abgleich

In diesem Abschnitt werden alle erforderlichen elektrischen Einstellarbeiten beschrieben.

1. Folgende Ausstattung wird benötigt:

1.1 Röhrenvoltmeter oder hochohmiges Digital-Voltmeter für 1 mV bis 50 Volt
1.2 Zweistrahl-Oszilloskop, Spannungsbereich: 5 mV bis 50 Volt pro Teilung. Frequenzbereich: Gleichspannung bis 10 MHz. Tastköpfe 10:1 und 1:1
1.3 Frequenzzähler, Frequenzbereich: 0 bis 10 MHz
1.4 Farbfernsehgerät oder Monitor
1.5 Schraubendreher/Abgleichstift
1.6 VHS-Testkassette, Best.-Nr. 8 627 000 540
1.7 Videowobbler
1.8 Sinusgenerator
1.9 Netzgerät 12 V regelbar

2. Der elektrische Abgleich gliedert sich in:

2.1 Servoteil
2.2 Luminanz-, Farb- und Kopfverstärkerteil
2.3 Tonteil
2.4 Timerteil

Electrical Adjustment Procedure

All required electrical adjustment procedures are described in this section.

1. The following equipment is required:

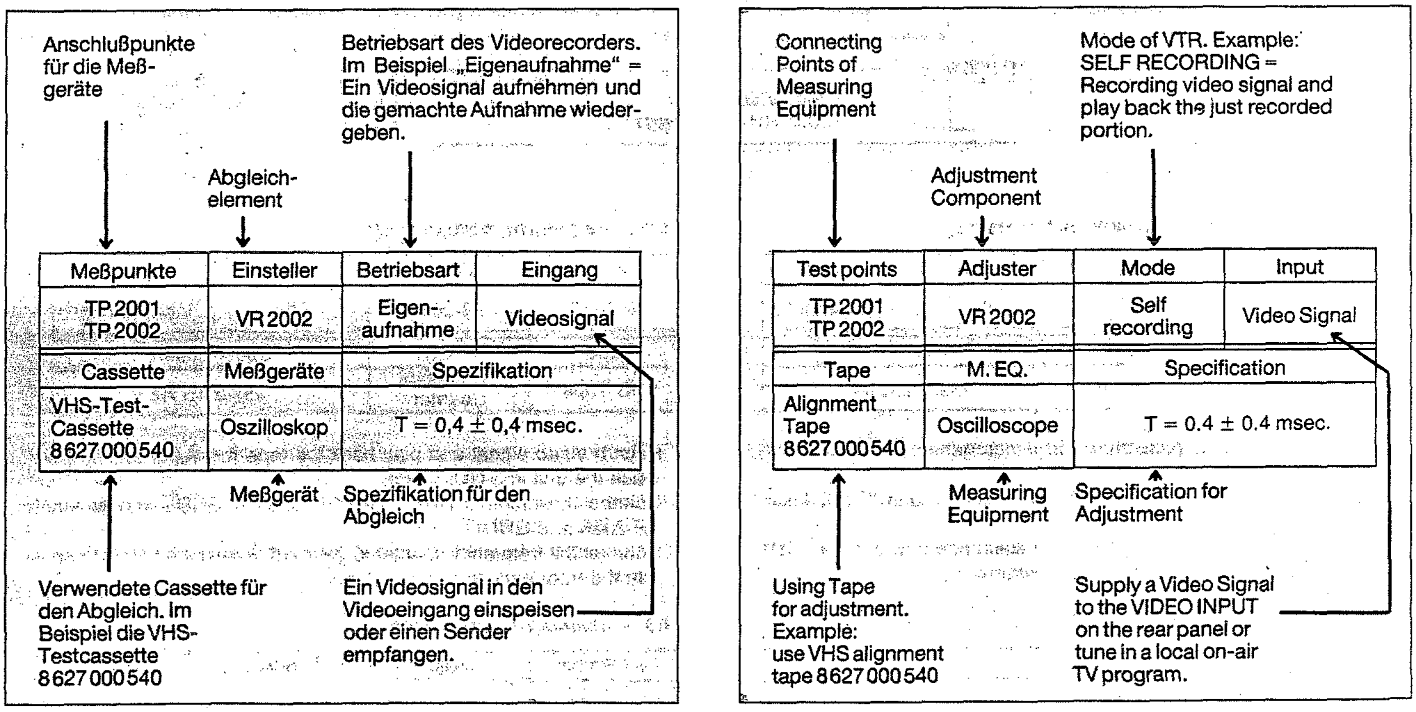
1.1 VTVM (Vacuum Tube Volt Meter) or DVM (Digital Volt Meter). Volt Range: 0.001-50 V
1.2 Dual-Trace Oscilloscope, Volt Range: 0.005-50 V per section, Frequency Range: DC-10MHz, Probes: 10:1 and 1:1
1.3 Frequency Counter, Frequency Range: 0-10 MHz
1.4 Color TV Set or Monitor
1.5 Screwdriver/Alignment Pin
1.6 VHS Alignment Tape, Part No. 8 627 000 540
1.7 Video Sweep
1.8 Signal Generator
1.9 Regulated DC Power Supply 12 V

2. The electrical adjustment is divided into:

2.1 Servo Section
2.2 Luminance, Chrominance and Head Amp. Section
2.3 Audio Section
2.4 Timer Section

Wie die Abgleichanleitung gelesen wird:

How to Read the Adjustment Procedures:



Anschlußpunkte für die Meßgeräte

Abgleichelement

Betriebsart des Videorecorders. Im Beispiel „Eigenaufnahme" = Ein Videosignal aufnehmen und die gemachte Aufnahme wiedergeben.

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 2001 TP 2002	VR 2002	Eigenaufnahme	Videosignal
Cassette	Meßgeräte	Spezifikation	
VHS-Test-Cassette 8627000540	Oszilloskop	T = 0,4 ± 0,4 msec.	

Meßgerät

Spezifikation für den Abgleich

Verwendete Cassette für den Abgleich. Im Beispiel die VHS-Testcassette 8627000540

Ein Videosignal in den Videoeingang einspeisen oder einen Sender empfangen.

Connecting Points of Measuring Equipment

Adjustment Component

Mode of VTR. Example: SELF RECORDING = Recording video signal and play back the just recorded portion.

Test points	Adjuster	Mode	Input
TP 2001 TP 2002	VR 2002	Self recording	Video Signal
Tape	M. EQ.	Specification	
Alignment Tape 8627000540	Oscilloscope	T = 0.4 ± 0.4 msec.	

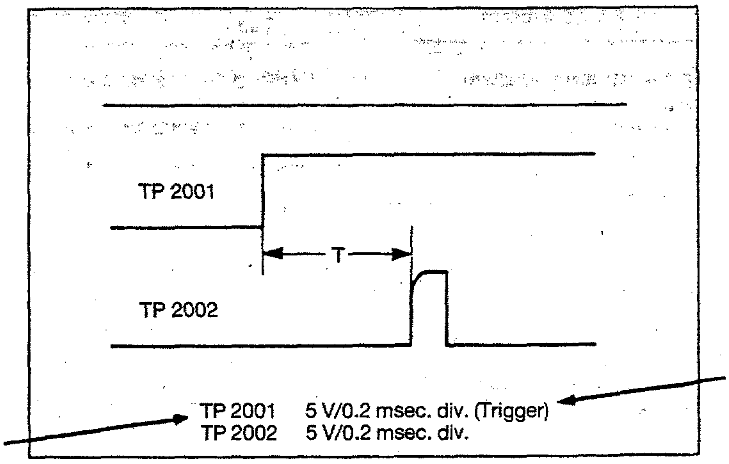
Measuring Equipment

Specification for Adjustment

Using Tape for adjustment. Example: use VHS alignment tape 8627000540

Supply a Video Signal to the VIDEO INPUT on the rear panel or tune in a local on-air TV program.

Fig. 1



TP 2001 5 V/0.2 msec. div. (Trigger)
TP 2002 5 V/0.2 msec. div.

Meßpunkte für das Oszilloskop
Connecting points of a scope

Triggerkanal des Oszilloskops
Trigger channel of a scope

Fig. 2

Bevor der elektrische Abgleich durchgeführt wird, sollte der Videorecorder wie folgt vorbereitet werden:

1. Regler TRACKING.................................. Raststellung
2. Regler PICTURE.................................... Raststellung
3. Schalter INPUT SELECT......................... LINE/AUDIO
4. Schalter AUDIO RECORDING .... AGC
5. Schalter COMB FILTER/TEST SIGNAL.. ON
6. Schalter MPX FILTER .... OFF
7. Schalter RECORDING............................ SP
8. Schalter IMAGE...................................... NORMAL
9. S-VHS-Schalter....................................... AUTO
10. Schalter DBS... OFF (RTV 910 EGC)

2.1 Servoteil

2.1.1 Einstellung der Lage des Kopfumschaltimpulses

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 2001 TP 3002	VR 2001	Wiedergabe	
Kassette	Meßgeräte	Spezifikation	
VHS-Testkassette 8 627 000 540	Oszilloskop	7 ± 0,5 Zeilen	

Before the electrical adjustment, set the VHS VTR as following conditions except for especial instructions in each adjustment item:

1. TRACKING Control VR.......................... Centre FIX Position
2. PICTURE Sharpness VR....................... Centre FIX Position
3. INPUT SELECT SW............................. LINE/AUDIO
4. AUDIO RECORDING SW...................... AGC
5. COMB FILTER/TEST SIGNAL SW........ ON
6. MPX FILTER SW.................................. OFF
7. RECORDING SW .... SP
8. IMAGE SW... NORMAL
9. S-VHS SW .... AUTO
10. DBS SW .... OFF (RTV 910 EGC)

2.1 Servo Section

2.1.1 PG Shifter Adjustment

Test Points	Adjuster	Mode	Input
TP 2001 TP 3002	VR 2001	Play	
Tape	M. EQ.	Specification	
VHS-Alignment Tape 8 627 000 540	Oscilloscope	7 ± 0.5 lines	

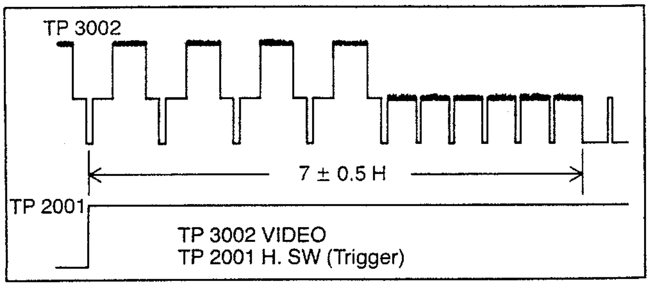


Fig. 3

2.1.2 Einstellung der Slow-Freilauffrequenz

Meßpunkt	Einsteller	Betriebsart	Eingang
TP 2015	VR 2013	Still	Videosignal
Kassette	Meßgeräte	Spezifikation	
VHS-Kassette	Frequenzzähler	453 ± 15 Hz	

1. Das Videosignal aufzeichnen und wiedergeben. Das Gerät auf Standbild schalten.
2. Zwei Drahtbrücken zwischen TP 2025 und GND und TP 2026 und GND legen.
3. Den Frequenzzähler an TP 2015 anklemmen und mit VR 2013 eine Frequenz von 453 ± 15 Hz einstellen.

2.1.3 Einstellung der Spurlage (Tracking)

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 2001 TP 2002	VR 2002	Eigenaufnahme	Videosignal
Kassette	Meßgeräte	Spezifikation	
VHS-Kassette	Oszilloskop	T = 1,6 ± 0,4 msec	

1. Den Spureinsteller (TRACKING) in die Raststellung drehen.
2. Die gerade gemachte Aufnahme wiedergeben.
3. Mit VR 2002 auf 1,6 ± 0,4 msec einstellen (Fig. 4).

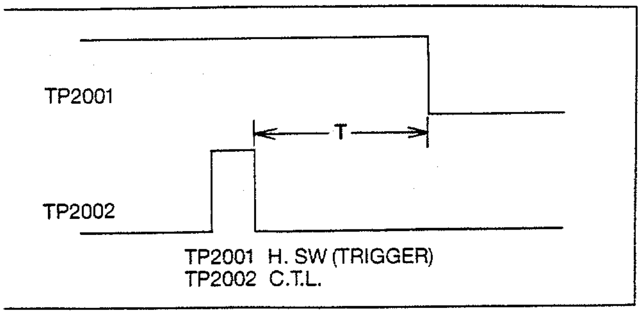


Fig. 4

2.1.2 Slow Freerun Adjustment

Test point	Adjuster	Mode	Input
TP 2015	VR 2013	Still	Video Signal
Tape	M. EQ.	Specification	
VHS Tape	Frequency Counter	453 ± 15 Hz	

1. Record video signal and play back the tape just recorded. Then place the unit in STILL mode.
2. Connect the jumper wire between TP 2025 and GND and between TP 2026 and GND.
3. Connect the frequency counter to TP 2015. Adjust the VR 2013 so that the frequency is 453 ± 15 Hz.

2.1.3 Tracking Fix Adjustment

Test Points	Adjuster	Mode	Input
TP 2001 TP 2002	VR 2002	Self recording	Video Signal
Tape	M. EQ.	Specification	
VHS Tape	Oscilloscope	T = 1.6 ± 0.4 msec.	

1. TRACKING VR in center fix position.
2. Play back the just recorded portion.
3. Adjust VR 2002 for 1.6 ± 0.4 msec. shown in Fig. 4.

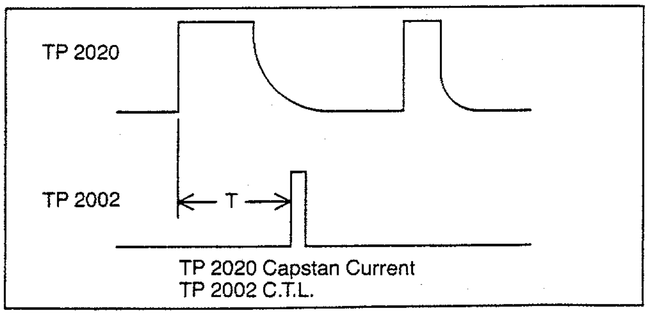


Fig. 5

2.1.4 Einstellung der Spurlage für SLOW-Tracking

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 2020 TP 2002	VR 2011 (SP) VR 2006 (LP)	Eigenaufnahme Slow	Videosignal

Kassette	Meßgeräte	Spezifikation
VHS Kassette	Oszilloskop	T = 20 ± 2,0 msec (SP) T = 16 ± 2,0 msec (LP)

1. Den TRACKING- sowie den SLOW-TRACKING-Einsteller in die Raststellung drehen.
2. Die gerade gemachte Aufnahme in Zeitlupe (SLOW) wiedergeben.
3. Mit VR 2011 eine Periodendauer „T" von 20 ± 2,0 msec für „SP" einstellen (Fig. 5).
4. Mit VR 2006 eine Periodendauer „T" von 16 ± 2 msec für „LP" einstellen (Fig. 5).

2.1.5 Einstellung des Standbildes

Meßpunkte	Einsteller	Betriebsart	Eingang
Monitor	VR 2010 (SP) VR 2009 (LP)	Eigenaufnahme Slow	Videosignal

Kassette	Meßgeräte	Spezifikation
VHS Kassette	Monitor	

1. Die gerade gemachte Aufnahme (SP u. LP) wiedergeben und den Recorder auf Zeitlupe „SLOW" schalten.
2. Mit VR 2010 (SP) oder VR 2009 (LP) das Bildzittern auf Minimum einstellen.
3. Das Bild darf auch in CUE und REVIEW nicht zittern, andernfalls die Einstellung wiederholen.

2.2 Luminanz-, Farb- und Kopfverstärkerteil

2.2.1 Einstellung der Begrenzungsspannung

Meßpunkt	Einsteller	Betriebsart	Eingang
TP 3401	VR 3401	Stop	

Kassette	Meßgeräte	Spezifikation
	Digitalvoltmeter	3,48 ± 0,05 V

1. Siehe Hinweis des Abgleichpunktes 2.2.5, Seite 1-42.
2. Das Gerät auf „LP" schalten.
3. Das Digitalvoltmeter an den Testpunkt TP 3401 anklemmen.
4. Mit VR 3401 eine Spannung von 3,48 ± 0,05 V einstellen.

2.2.2 Einstellung der Pilot-Burst Phase

- mit Vektorskop

Meßpunkt	Einsteller	Betriebsart	Eingang
TP 8301	C 8313	Stop	Farbbalkensignal (S-VHS-Eingang)

Kassette	Meßgeräte	Spezifikation
	Vektorskop	– 90 ± 5 Grad

1. Den Eingangswahlschalter auf S-VHS schalten.
2. Ein Farbbalkensignal in den S-VHS-Eingang einspeisen.
3. Das Vektorskop an den Testpunkt TP 8301 anschließen. Den Triggereingang des Vektorskopes mit dem LINE-OUT-Ausgang des Videorekorders verbinden.
4. Mit C 8313 die Phase des Pilot-Burst-Signals auf – 90 ± 5 Grad einstellen (siehe Fig. 6).

2.1.4 Fine Slow Tracking Fix Adjustment

Test Points	Adjuster	Mode	Input
TP 2020 TP 2002	VR 2011 (SP) VR 2006 (LP)	Self recording Slow	Video Signal

Tape	M. EQ.	Specification
VHS Tape	Oscilloscope	T = 20 ± 2.0 msec. (SP) T = 16 ± 2.0 msec. (LP)

1. TRACKING VR and SLOW TRACKING VR in center position.
2. Play back the just recorded portion in SLOW mode.
3. Adjust VR 2011 so that the period of "T" becomes 20 ± 2.0 msec. in "SP" Mode (Fig. 5).
4. Adjust VR 2006 so that the period of "T" becomes 16 ± 2.0 msec. in "LP" Mode (Fig. 5).

2.1.5 Artificial V-Sync. Adjustment

Test Points	Adjuster	Mode	Input
Monitor	VR 2010 (SP) VR 2009 (LP)	Seld recording Slow	Video Signal

Tape	M. EQ.	Specification
VHS Tape	Monitor	

1. Play back the just recorded portion (SP and LP) in SLOW mode.
2. Adjust VR 2010 (SP) or VR 2009 (LP) so that the V-dancing does not appear on the TV-Monitor Screen.
3. Confirm that the V-dancing does not appear in CUE and REVIEW modes. If the V-dancing is appeared on the TV Monitor, this adjustment should be repeated again.

2.2 Luminance, Chrominance and Head Amp. Section

2.2.1 Sub-Emphasis Limiter Balance Adjustment

Test point	Adjuster	Mode	Input
TP 3401	VR 3401	Stop	

Tape	M. EQ.	Specification
	D.V.M.	3,48 ± 0,05 V

1. See Note of Adjustment Point 2.2.5 on Page 1-42.
2. Set the Recording SW to "LP" position.
3. Connect the D.V.M. to TP 3401.
4. Adjust VR 3401 so the reading of D.V.M. is 3.43 V ~ 3.53 V in the DC range.

2.2.2 Pilot Burst Phase Adjustment

- with Vectorscope

Test point	Adjuster	Mode	Input
TP 8301	C 8313	Stop	Colour Bar Signal (S-Video Input)

Tape	M. EQ.	Specification
	Vectorscope	– 90 ± 5 degrees

1. Set the Input Signal Selector to S-VIDEO position.
2. Supply the colour bar signal to the S-Video Input on the rear panel.
3. Connect the vectorscope to TP 8301 and its external terminal for trigger to Line Output of VTR.
4. Adjust C 8313 so that the pilot burst signal is placed in – 90 ± 5 degrees against the U-Axis on Vectorscope.

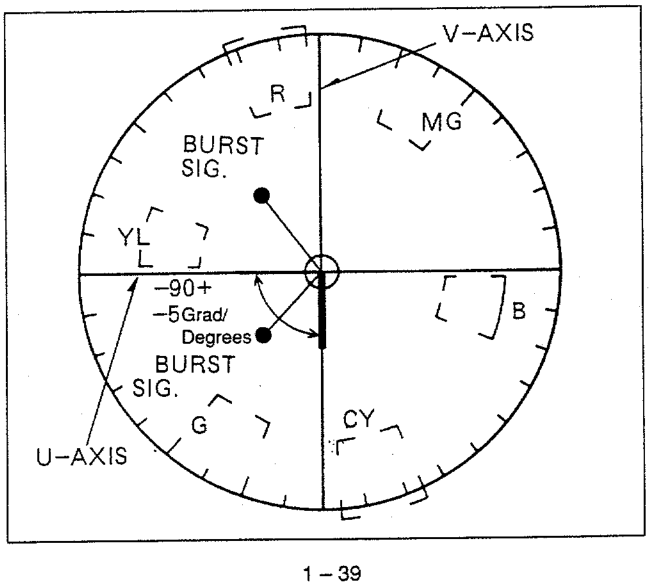


Fig. 6

Hinweis:
Um ein getrenntes Luminanz- und Farbsignal in den Videorecorder einspeisen zu können, müssen nachstehende Punkte beachtet werden.

1. Einen zweiten, intakten Videorecorder des gleichen Typs (S-VHS) verwenden und wie folgt vorbereiten.
2. Den Eingangssignal-Wahlschalter auf LINE/AUDIO schalten.
3. Ein Farbbalkensignal in den LINE-Eingang einspeisen.
4. Den zu überprüfenden und den intakten Videorecorder mit dem S-VHS-Kabel verbinden (Fig. 7).

Note:
How to obtain the Luminance and chrominance Seperation signal for S-VIDEO INPUT.

1. Prepare a new S-VHS Video Tape recorder and use it to obtain the luminance and chrominance separation signals.
2. Set the Input signal selector to LINE position on prepared S-VHS VTR.
3. Supply the Colour bar signal to Line Input or 21 PIN AV INPUT on prepared S-VHS VTR.
4. Connect the S-Video cable between S-VHS VTR's (Fig. 7).

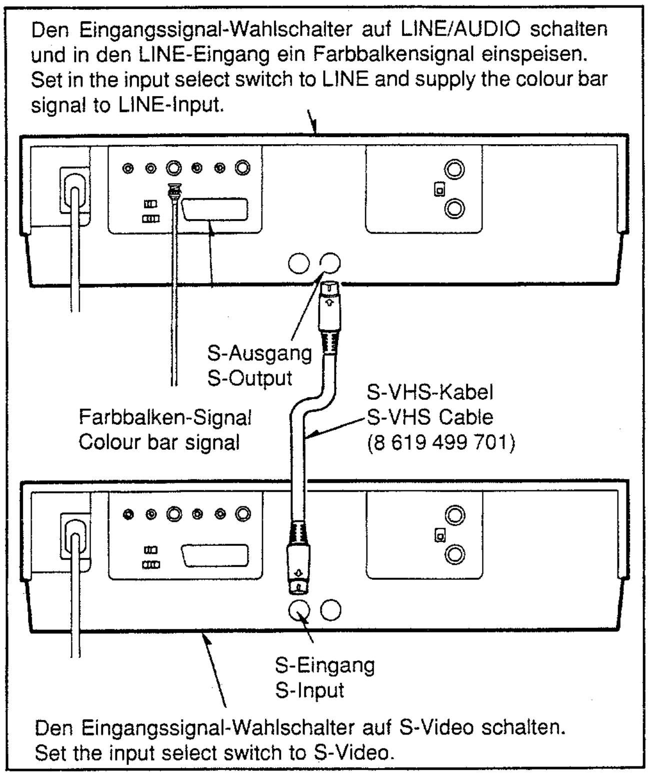

Den Eingangssignal-Wahlschalter auf LINE/AUDIO schalten und in den LINE-Eingang ein Farbbalkensignal einspeisen.
Set in the input select switch to LINE and supply the colour bar signal to LINE-Input.
S-Ausgang
S-Output
Farbbalken-Signal
Colour bar signal
S-VHS-Kabel
S-VHS Cable
(8 619 499 701)
S-Eingang
S-Input
Den Eingangssignal-Wahlschalter auf S-Video schalten.
Set the input select switch to S-Video.

Fig.7

- mit Oszilloskop

Meßpunkt	Einsteller	Betriebsart	Eingang
Kanal 1 (siehe Text) IC8301-Pin9 (Kanal2)	C 8313	Stop	Farbbalken Signal
Kassette	Meßgeräte	Spezifikation	
	Oszilloskop	90 Grad Phasendifferenz	

1. Den Eingangswahlschalter auf LINE/AUDIO schalten.
2. Ein Farbbalkensignal in den LINE-Eingang einspeisen.
3. Den Kanal 1 des Oszilloskopes an den Pin 29 des Luminanz- und Farbteils anschließen. Den Kanal 2 mit dem Pin 9 des IC's 8301 verbinden.
4. Mit C 8313 den Phasenabstand des Pilot-Burst-Signals zum Burst-Signal (Eingangssignal) auf 90 Grad einstellen (Fig. 8).

- with Oscilloscope

Test Point	Adjuster	Mode	Input
CH 1 (see Text) IC8301Pin9(CH2)	C 8313	Stop	Colour Bar Signal
Tape	M. EQ.	Specification	
	Oscilloscope	90 degrees Phase difference	

1. Set the Input signal selector to LINE position.
2. Supply the colour bar signal to LINE Input on the rear panel.
3. Connect the oscilloscope to luminance/chrominance pack-(29) for CH-1 and IC8301-9 for CH2.
4. Adjust C8313 so that the pilot burst signal is placed in 90 degrees against the Input Colour Sub carrier as shown in Fig. 8.

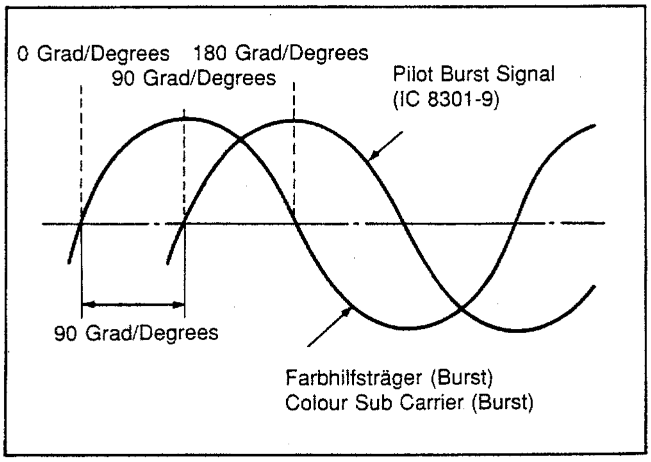

0 Grad/Degrees
180 Grad/Degrees
90 Grad/Degrees
Pilot Burst Signal
(IC 8301-9)
90 Grad/Degrees
Farbhilfsträger (Burst)
Colour Sub Carrier (Burst)

Fig. 8

2.2.3 Einstellung des Weiß- und Schwarz-Klemmpegels

Meßpunkt	Einsteller	Betriebsart	Eingang
TP 3024	VR 3406 (weiß) VR 3404 (schwarz)	Stop	Farbbalkensignal (S-Video-Eingang)
Kassette	Meßgeräte	Spezifikation	
	Oszilloskop	Weiß: 210 ± 5 % Schwarz: 170 ± 5 %	

1. Siehe Hinweis des Abgleichpunktes 2.2.5, Seite 1-42.
2. Den Eingangswahlschalter auf S-Video schalten.
3. Den Geschwindigkeits-Wahlschalter auf „LP" schalten.
4. Ein Farbbalkensignal in den S-Video-Eingang einspeisen.
5. Das Oszilloskop am TP 3024 anklemmen.
6. Mit VR 3406 den Weiß-Klemmpegel auf 210 ± 5 % einstellen und mit VR 3404 den Schwarz-Klemmpegel auf 170 ± 5 % einstellen (Fig. 9).

2.2.3 White and Dark Clip Adjustment

Test Point	Adjuster	Mode	Input
TP 3024	VR 3406 (white) VR 3404 (dark)	Stop	Colour Bar Signal (S-Video Input)
Tape	M. EQ.	Specification	
	Oscilloscope	white: 210 ± 5 % dark: 170 ± 5 %	

1. See Note of Adjustment Point 2.2.5 on Page 1-42.
2. Set the Input Signal Selector to S-VIDEO Position.
3. Set the Tape Speed Selector to LP position.
4. Supply the colour bar signal to S-Video Input.
5. Connect the oscilloscope to TP 3024.
6. Adjust VR 3406 (WHITE CLIP) and VR 3404 (DARK CLIP) respectively so that the A level of white clip is 210 ± 5 % and B level of dark clip is 170 ± 5 % as shown in Fig. 9.

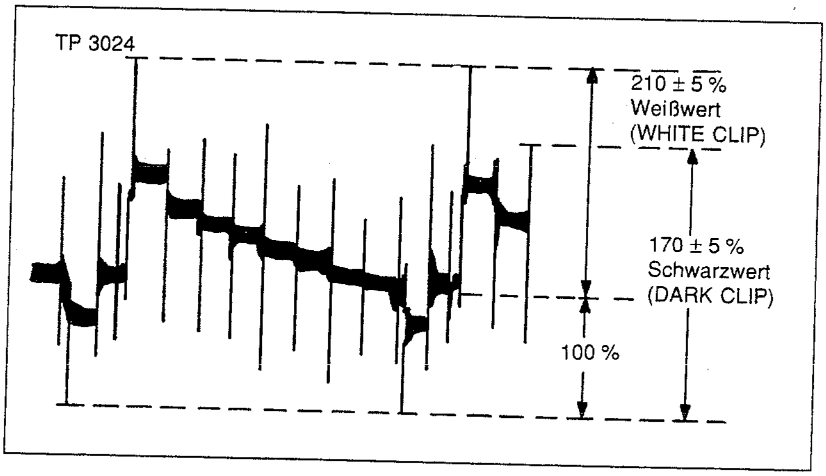


Fig. 9

Hinweis:
Bevor der Abgleichschritt 2.2.4 Einstellung der Synchronisations-Kippfrequenz und des Hubs durchgeführt wird, muß der Abgleichpunkt 2.2.3 abgeschlossen sein.

2.2.4 Einstellung der Synchronisations-Kippfrequenz und des Hubs (S-VHS-Mode)

Hinweis:
Dieser Abgleichspunkt darf erst dann durchgeführt werden, wenn die Abgleichpunkte des gesamten Luminanz- und Farbteils und des Kopfverstärkerteils durchgeführt sind.

a) Einstellung der Synchronisations-Kippfrequenz

Meßpunkt	Einsteller	Betriebsart	Eingang
IC 3402 Pin 11	VR 3402	Aufnahme	kein Signal
Kassette	Meßgeräte	Spezifikation	
S-VHS-Kassette	Frequenzzähler	5,4 MHz ± 50 KHz	

1. Eine Aufnahme ohne Signal durchführen (S-VHS-Mode).
2. Während der Aufnahme mit VR 3402 eine Frequenz von 5,4 MHz ± 50 KHz am Pin 11 des IC's 3402 einstellen.

b) Einstellung des Hubs

Meßpunkt	Einsteller	Betriebsart	Eingang
Video out	VR 3403	Eigenaufnahme	Farbbalkensignal
Kassette	Meßgeräte	Spezifikation	
S-VHS-Kassette	Oszilloskop	1,0 ± 0,05 V_{ss}	

1. Das Oszilloskop an den Video-Ausgang (VIDEO OUT) anklemmen.
2. Die gerade gemachte Aufnahme wiedergeben.

Note:
Prior to Sync Tip Frequency Adjustment and Deviation Adjustment (Item 2.2.4), this adjustment must be completed.

2.2.4 Sync Tip Frequency and Deviation Adjustment (S-VHS-Mode)

Note:
This adjustment should be performed since the other adjustment of Luminance Chrominance & Head Amp have been always completed.

a) Sync Tip Frequency Adjustment

Test Point	Adjuster	Mode	Input
IC 3402 Pin 11	VR 3402	Recording	no Signal
Tape	M. EQ.	Specification	
S-VHS Blank Tape	Frequency-counter	5,4 MHz ± 50 KHz	

1. Record the no signal with S-VHS mode using S-VHS blank tape.
2. Adjust VR 3402 so that the reading of frequency counter is 5.4 MHz ± 0.05 MHz at IC 3402-11.

b) Deviation Adjustment

Test Point	Adjuster	Mode	Input
Video out	VR 3403	self Recording	Colour Bar Signal
Tape	M. EQ.	Specification	
S-VHS Blank Tape	Oscilloscope	1,0 ± 0,05 V_{p-p}	

1. Connect the oscilloscope to the video outjack.
2. Play back the just recorded portion.

3. Den Signalpegel des Ausgangssignals überprüfen. Liegt der Signalpegel außerhalb der Spezifikation, so ist er mit VR 3403 während der Aufnahme auf 1,0 ± 0,05V_{ss} einzustellen. Die Aufnahme wiederholen und überprüfen, ob bei der Wiedergabe der Signalpegel bei 1,0 ± 0,05 V_{ss} liegt (Fig. 10).

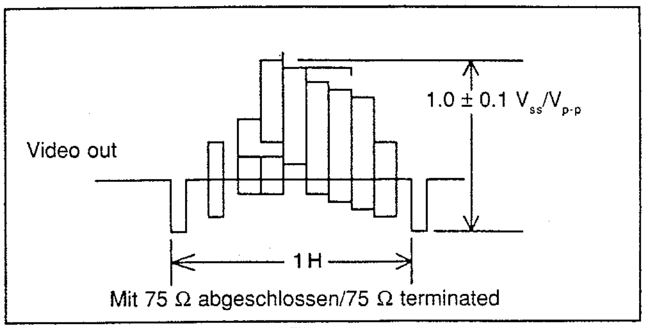

Video out
1.0 ± 0.1 V_{ss}/V_{p-p}
1 H
Mit 75 Ω abgeschlossen/75 Ω terminated

Fig. 10

2.2.5 Aufnahmestrom-Einstellung für Luminanz- und Farbsignal

Hinweis:

Bevor die Einstellungen der Abgleichpunkte 2.2.1, 2.2.3 und 2.2.4 durchgeführt werden, muß dieser Abgleichpunkt (2.2.5) vollständig abgeglichen sein.

- Aufnahmestrom-Einstellung des Farbsignals

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 503 (Heiß) TP 504 (Masse)	VR 502 (Kopfverstärker)	Aufnahme (LP)	Farbbalkensignal
Kassette	Meßgeräte	Spezifikation	
S-VHS Kassette	Oszilloskop	28 ± 3 mV_{ss}	

1. Den Geschwindigkeitswahlschalter auf „LP" schalten.
2. Das Oszilloskop an TP 503 (Heiß) und TP 504 (Masse) anschließen.
3. Das Luminanzsignal mit VR 501 auf Null stellen, um das Farbsignal zu erkennen.
4. Mit VR 502 den Farb-Aufnahmestrom auf 28 ± 3 mV_{ss} einstellen (Fig. 11).

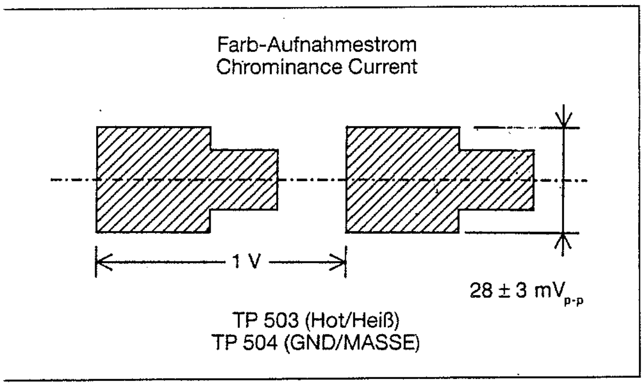


Fig. 11

- Aufnahmestrom-Einstellung des Luminanzsignals im S-VHS-Mode

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 503 (Heiß) TP 504 (Masse)	VR 501 (Kopfverstärker)	Aufnahme (LP)	Farbbalkensignal
Kassette	Meßgeräte	Spezifikation	
S-VHS-Kassette	Oszilloskop	120 ± 5 mV_{ss}	

5. Nachdem der Farb-Aufnahmestrom eingestellt wurde, mit VR 501 den Luminanz-Aufnahmestrom auf 120 ± 5 mV_{ss} einstellen (Fig. 12).

- Aufnahmestrom-Einstellung des Luminanzsignals im VHS-Mode

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 503 (Heiß) TP 504 (Masse)	VR 3104	Aufnahme (LP)	Farbbalkensignal
Kassette	Meßgeräte	Spezifikation	
VHS-Kassette	Oszilloskop	110 ± 5 mV_{ss}	

6. Das Gerät auf VHS schalten und mit VR 3104 das Luminanzsignal auf 110 ± 5 mV_{ss} einstellen (Fig. 12).

3. Confirm the level of output signal and if the output signal is out of specifications, adjust VR 3403 during recording so that the playback output signal (1,0 ± 0,05V_{p-p}) can be obtained by repeating the recording and playback (Fig. 10).

2.2.5 Luminance and Chrominance Recording Current Adjustment

Note:

Prior to Sub-Emphasis Limiter Balance Adjustment (2.2.1), White and Dark Clip Adjustment (2.2.3) and Sync Tip Frequency/Deviation Adjustment (2.2.4) this adjustment must be completed.

- Chrominance Recording Current Adjustment

Test Points	Adjuster	Mode	Input
TP 503 (HOT) TP 504 (GND)	VR 502 (Head Amp. Pack)	Recording (LP)	Colour Bar Signal
Tape	M. EQ.	Specification	
S-VHS Blank Tape	Oscilloscope	28 ± 3 mV_{p-p}	

1. Set the tape speed selector to LP position.
2. Connect the Oscilloscope to TP 503 (HOT) and TP 504 (GND).
3. Before chrominance recording current adjustment, Luminance recording current must be closed to observe the chrominance signal.
4. Adjust VR 502 for 28 ± 3 mV_{p-p} as shown in Fig. 11.

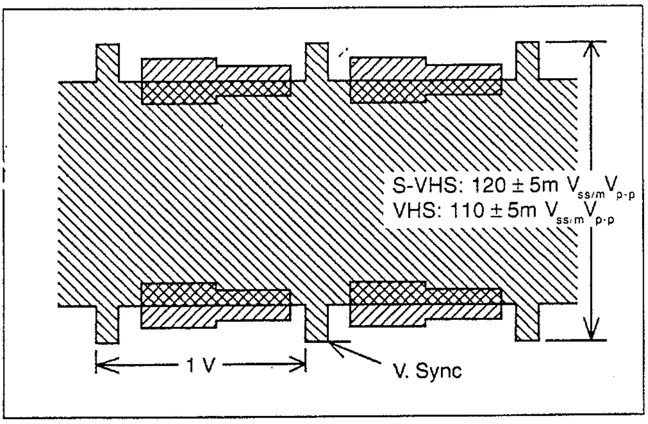

S-VHS: 120 ± 5m $V_{ss/m}V_{p-p}$
VHS: 110 ± 5m $V_{ss/m}V_{p-p}$
1 V
V. Sync

Fig. 12

- S-VHS Luminance Recording Current Adjustment

Test Points	Adjuster	Mode	Input
TP 503 (HOT) TP 504 (GND)	VR 501(Head Amp. Pack)	Recording (LP)	Colour Bar Signal
Tape	M. EQ.	Specification	
S-VHS Blank Tape	Oscilloscope	120 ± 5 mV_{p-p}	

5. After chrominance recording current adjustment, adjust VR 501 for 120 ± 5 mV_{p-p} as shown in Fig. 12.

- VHS Luminance Recording Current Adjustment

Test Points	Adjuster	Mode	Input
TP 503 (HOT) TP 504 (GND)	VR 3104	Recording (LP)	Colour Bar Signal
Tape	M. EQ.	Specification	
VHS Tape	Oscilloscope	110 ± 5 mV_{p-p}	

6. Set the S-VHS selector to OFF position and adjust VR 3104 for 110 ± 5 mV_{p-p} as shown in Fig. 12.

2.2.6 Einstellung des Video-Wiedergabepegels bei S-VHS

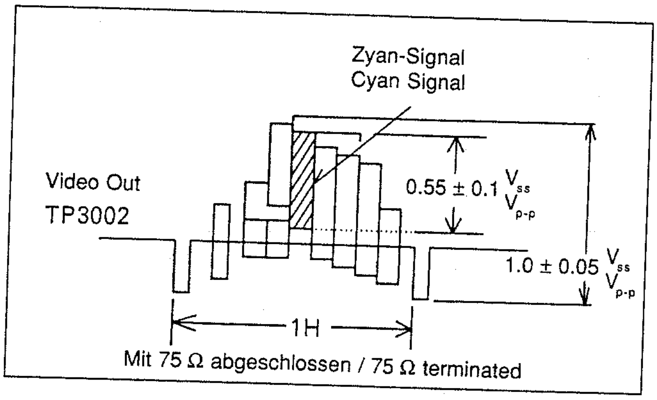
Meßpunkt	Einsteller	Betriebsart	Eingang
Video Out	VR 3405 (Y) VR 8203 (C)	Eigenaufnahme	Farbbalkensignal
Kassette	**Meßgeräte**	**Spezifikation**	
S-VHS Kassette	Oszilloskop	1,0 ± 0,05 V_{ss} (Y) 0,55 ± 0,1 V_{ss} (C)	

1. Das Gerät auf „LP" schalten.
2. Das Oszilloskop an den Video-Ausgang anklemmen und mit 75 Ω abschließen.
3. Mit VR 3405 das Luminanz-Signal auf 1,0 ± 0,05 V_{ss} einstellen und mit VR 8203 das Farbsignal (Zyan-Pegel) auf 0,55 ± 0.1 V_{ss} einstellen (Fig. 13).

2.2.6 S-VHS Playback Video Level Adjustment

Test Point	Adjuster	Mode	Input
Video Out	VR 3405 (Y) VR 8203 (C)	Self Recording	Colour Bar Signal
Tape	**M. EQ.**	**Specification**	
S-VHS Blank Tape	Oscilloscope	1,0 ± 0,05 V_{p-p} (Y) 0,55 ± 0,1 V_{p-p} (C)	

1. Set the Tape Speed Selector to LP position.
2. Connect the oscilloscope to Line out.
3. Adjust VR 3405 for 1.0 ± 0.05 V_{p-p} and VR 8203 für 0.55 ± 0.1 V_{p-p} as shown in Fig. 13.



Mit 75 Ω abgeschlossen / 75 Ω terminated

Fig. 13

2.2.7 Einstellung des Frequenzganges bei S-VHS

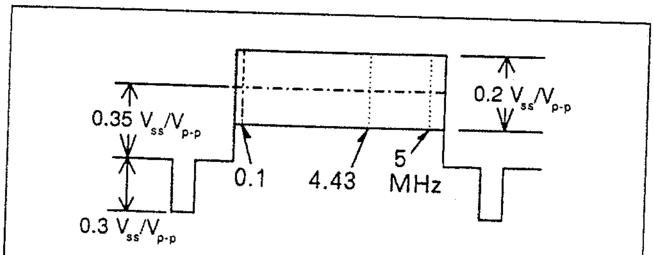
Meßpunkt	Einsteller	Betriebsart	Eingang
S-VHS-Ausgang	VR 3101	Eigenaufnahme	Video Wobbler
Kassette	**Meßgeräte**	**Spezifikation**	
S-VHS Kassette	Video Wobbler Oszilloskop	− 8 ± 2 dB (32 – 50 %)	

1. Die Ausgangsspannung des Wobblers, wie in Fig. 14 gezeigt, einstellen.
2. Das Wobblersignal in den S-VHS-Eingang einspeisen.
3. Das Gerät auf S-VHS schalten.
4. Das Wobblersignal aufnehmen und wieder abspielen.
5. Mit VR 3101 den 5 MHz-Pegel auf − 8 ± 2 dB einstellen (Fig. 15).

2.2.7 S-VHS Frequency Response Adjustment

Test Point	Adjuster	Mode	Input
S-VHS Output	VR 3101	Self Recording	Video sweep
Tape	**M. EQ.**	**Specification**	
S-VHS-Blank Tape	Video sweep Oscilloscope	− 8 ± 2 dB (32 – 50 %)	

1. Set the sweep generator output as shown in Fig. 14.
2. Supply the video sweep signal to S-Video Input.
3. Set the Input Signal Selector to S-VHS position.
4. Playback the just recorded portion.
5. Adjust VR 3101 so that the level at 5 MHz becomes − 8 ± 2 dB (32~50 %) comparing with the level at 0.1 MHz as shown in Fig. 15.



ohne Burst-Signal (mit **150** Ω abgeschlossen)
Burst Signal off (**150** Ω terminated)

Fig. 14

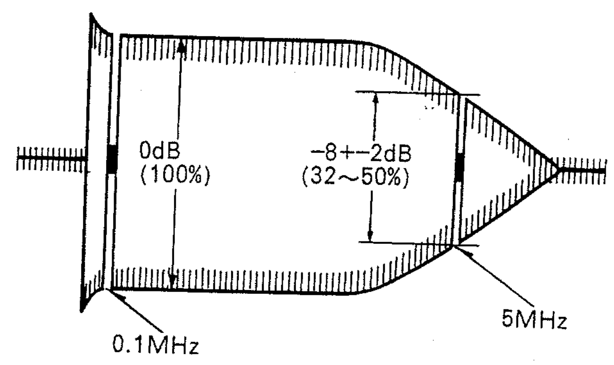


Fig. 15

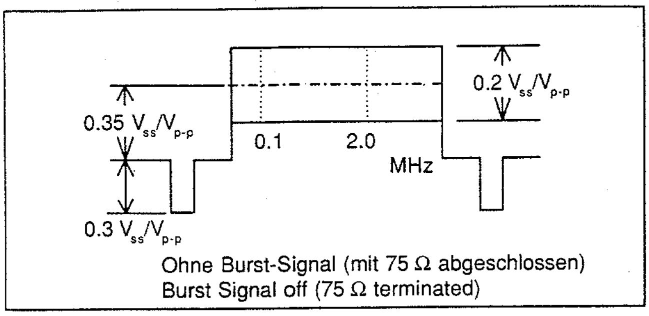
2.2.8 Einstellung des Frequenzganges bei VHS

Meßpunkt	Einsteller	Betriebsart	Eingang
Video out	VR 3102 (SP) VR 3103 (LP)	Eigenaufnahme	Videowobbler (VIDEO IN)
Kassette	**Meßgeräte**	**Spezifikation**	
VHS Kassette	Videowobbler Oszilloskop	A = 0 ± 1 dB (SP) A = − 2 ± 1 dB (LP)	

2.2.8 VHS Frequency Response Adjustment

Test Point	Adjuster	Mode	Input
Video out	VR 3102 (SP) VR 3103 (LP)	Self Recording	Video sweep (VIDEO IN)
Tape	**M. EQ.**	**Specification**	
VHS Tape	Video Sweep Oscilloscope	A = 0 ± 1 dB (SP) A = − 2 ± 1 dB (LP)	

1. Die Ausgangsspannung des Wobblers wie in Fig. 16 gezeigt einstellen.
2. Die gerade gemachte Aufnahme wiedergeben.
3. Mit VR 3102 (SP) und VR 3103 (LP) eine Kurvenform wie in Fig. 17 gezeigt einstellen.



Ohne Burst-Signal (mit 75 Ω abgeschlossen)
Burst Signal off (75 Ω terminated)

Fig. 16

2.2.9 Einstellung des S-VHS-Luminanz- und Farbteils

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 3703	VR 3701 VR 3702	Aufnahme	Farbbalken-signal
TP 3701	VR 3708 VR 3707		
TP 3702	VR 3703 VR 3704		Multi-Burst-signal

Kassette	Meßgeräte	Spezifikation
S-VHS-Kassette	Video Wobbler Oszilloskop	siehe Text und Fig.

1. Das Oszilloskop an TP 3703 anschließen.
2. Das Gerät auf Aufnahme schalten.
3. Mit VR 3701 und VR 3702 wechselweise den Farbpegel auf Maximum einstellen (Fig. 18).

1. Set the sweep generator output as shown in Fig. 16.
2. Play back the just recorded portion.
3. Adjust VR 3102 (SP) and VR 3103 (LP) so that the level at 2 MHz (A) becomes within specification comparing with the level at 0.1 MHz as shown in Fig. 17.

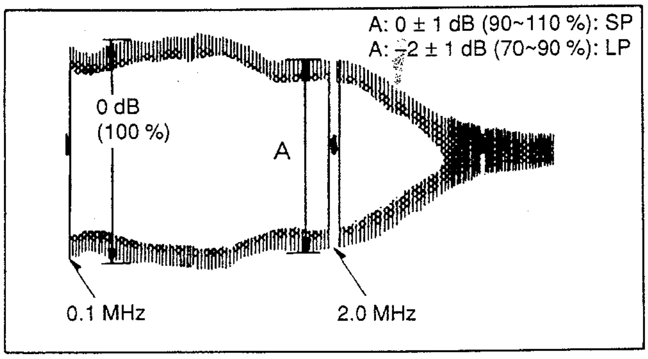


Fig. 17

2.2.9 S-VHS Luminance/Chrominance Adjustment

Test Point	Adjuster	Mode	Input
TP 3703	VR 3701 VR 3702	Recording	Video Signal (Colour Bar)
TP 3701	VR 3708 VR 3707		
TP 3702	VR 3703 VR 3704		Video Signal (Multi Burst)

Tape	M. EQ.	Specification
S-VHS Blank Tape	Video sweep Oscilloscope	see Text and Fig.

1. Connect the oscilloscope to TP 3703.
2. Set the VTR to recording mode.
3. Adjust VR 3701 and VR 3702 mutually so that the chrominance level is maximized as shown in Fig. 18.

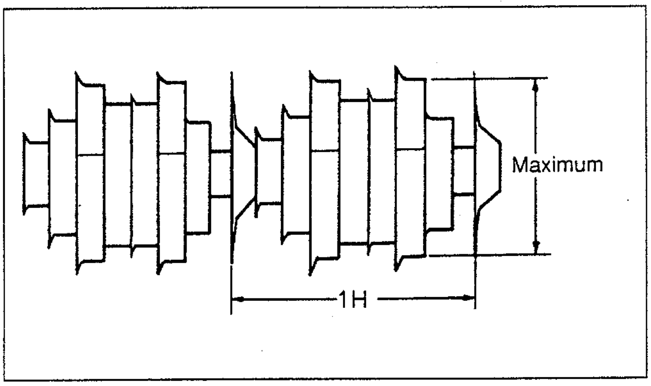


Fig. 18

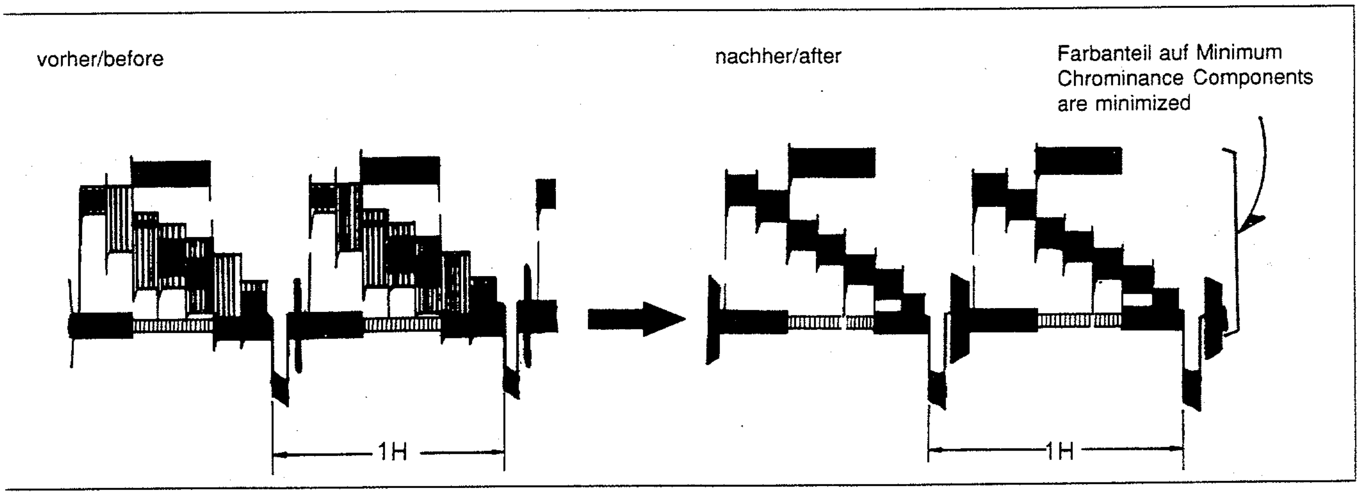


Fig. 19

4. Das Oszilloskop an TP 3701 anklemmen.
5. Mit VR 3708 und VR 3707 wechselweise den Farbpegel auf Minimum einstellen (Fig. 19).
6. Die Ausgangsspannung des Video-Wobblers, wie in Fig. 20 gezeigt, einstellen.

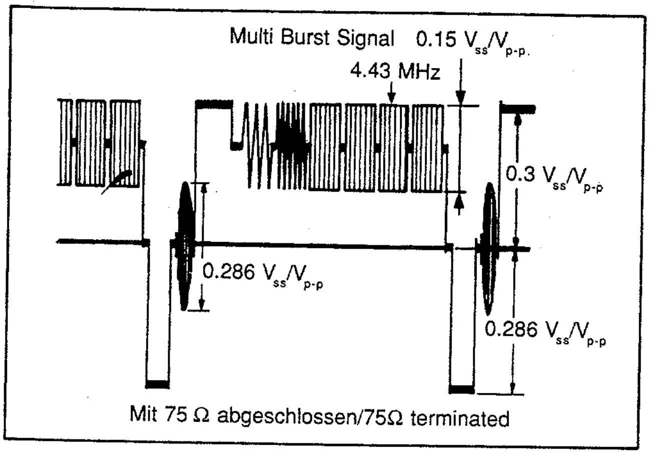

Multi Burst Signal 0.15 V_{ss}/V_{p-p}
4.43 MHz
0.3 V_{ss}/V_{p-p}
0.286 V_{ss}/V_{p-p}
0.286 V_{ss}/V_{p-p}
Mit 75 Ω abgeschlossen/75Ω terminated

Fig. 20

7. Das Multi-Burst-Signal des Wobblers in den Video-Eingang (VIDEO IN) einspeisen.
8. Das Oszilloskop an TP 3702 anschließen.
9. Mit VR 3703 und VR 3704 wechselweise das 4.43 MHz-Burst-Signal auf Minimum einstellen (Fig. 21).

2.2.10 Einstellung des Luminanz-Rauschens

Meßpunkt	Einsteller	Betriebsart	Eingang
IC 302 Pin 20	VR 302	Stop	Farbbalken-signal
Kassette	Meßgeräte	Spezifikation	
	Oszilloskop	Minimum	

Hinweis:
Bevor dieser Abgleich durchgeführt wird, muß der folgende Abgleichschritt (HQ-Verstärkungseinstellung) beendet sein.

1. Das Gerät auf „LP“ schalten.
2. Das Oszilloskop an IC 302 Pin 20 anklemmen.
3. Mit VR 302 das Signal auf Minimum einstellen.

2.2.11 HQ-Verstärkungseinstellung

Meßpunkt	Einsteller	Betriebsart	Eingang
Video-Ausgang	VR 301	Stop	Farbbalken-signal
Kassette	Meßgeräte	Spezifikation	
VHS Kassette	Oszilloskop	$1{,}0\ V_{ss} \pm 0{,}1\ V_{ss}$	

1. Das Gerät auf „LP“ schalten.
2. Das Oszilloskop an den Videoausgang anschließen.
3. Mit VR 301 einen Videopegel von $1{,}0 \pm 0{,}1\ V_{ss}$ einstellen (Fig. 22).

4. Connect the oscilloscope to TP 3701.
5. Adjust VR 3708 and VR 3707 mutually so that the chrominance level is minimized as shown in Fig. 19.
6. Set the video sweep generator output as shown in Fig. 20.

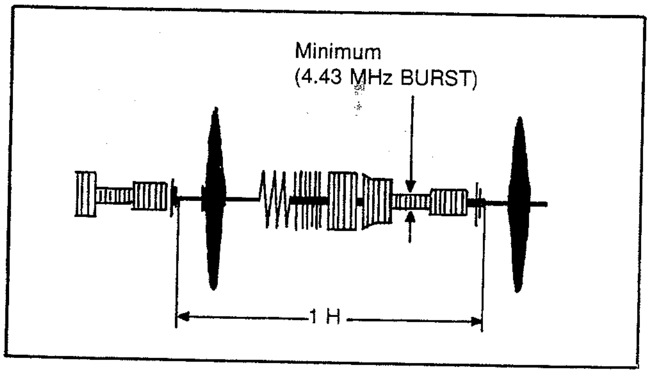


Fig. 21

7. Supply the multi burst signal from video sweep to Line Input.
8. Connect the oscilloscope to TP 3702.
9. Adjust VR 3703 and VR 3704 mutually so that the 4.43 MHz burst signal is minimized as shown in Fig. 21.

2.2.10 Luminance Noise Reduction Balance Adjustment

Test point	Adjuster	Mode	Input
IC 302 Pin 20	VR 302	Stop	Colour Bar Signal
Tape	M. EQ.	Specification	
	Oscilloscope	Minimum	

Note:
Prior to make this adjustment, the HQ Amp Gain adjustment should be always completed.

1. Set the Tape Speed Selector to LP position.
2. Connect the oscilloscope to pin 20 of IC 302 on the Luminance & Chrominance C.B.A.
3. Adjust VR 302 so that the waveform is minimized.

2.2.11 HQ Amp. Gain Adjustment

Test point	Adjuster	Mode	Input
Video Out	VR 301	Stop	Colour Bar Signal
Tape	M. EQ.	Specification	
VHS Tape	Oscilloscope	$1.0\ V_{p-p} \pm 1.0\ V_{p-p}$	

1. Set the tape speed selector to “LP” position.
2. Connect the Oscilloscope to Video Line Out.
3. Adjust VR 301 so that the video level is $1.0 \pm 0.1\ V_{p-p}$ as shown in Fig. 22.

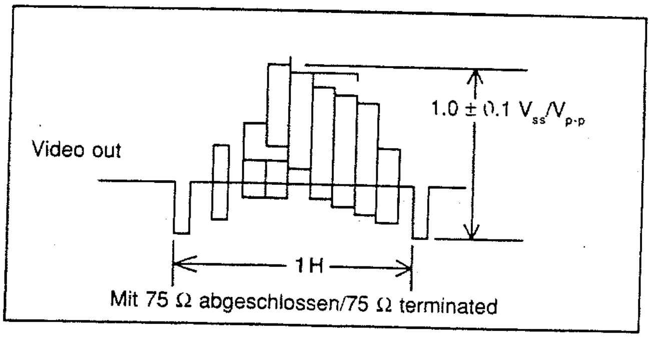

1.0 ± 0.1 V_{ss}/V_{p-p}
Video out
1 H
Mit 75 Ω abgeschlossen/75 Ω terminated

Fig. 22

2.2.12 Farbsignal-Einstellung

Meßpunkt	Einsteller	Betriebsart	Eingang
IC 302 Pin 7	VR 801 VR 802	Eigenaufnahme	Farbbalken-signal

Kassette	Meßgeräte	Spezifikation
	Oszilloskop	Minimum

1. Das soeben aufgenommene Stück wiedergeben.
2. Das Oszilloskop an IC 302 Pin 7 anklemmen.
3. Mit VR 801 und VR 802 (Luminanz- und Farbteil-Platine) im Wechsel die Welligkeit des Signales auf Minimum einstellen (Fig. 23).

2.2.12 Chroma Recursive Adjustment

Test point	Adjuster	Mode	Input
IC 302 Pin 7	VR 801 VR 802	Self recording	Colour Bar Signal

Tape	M. EQ.	Specification
	Oscilloscope	Minimum

1. Play back the just recorded portion.
2. Connect the oscilloscope to pin 7 of IC 302 on the Luminance and Chrominance C.B.A.
3. Adjust VR 801 and VR 802 mutually so that the chrominance waveform is minimized as shown in Fig. 23.

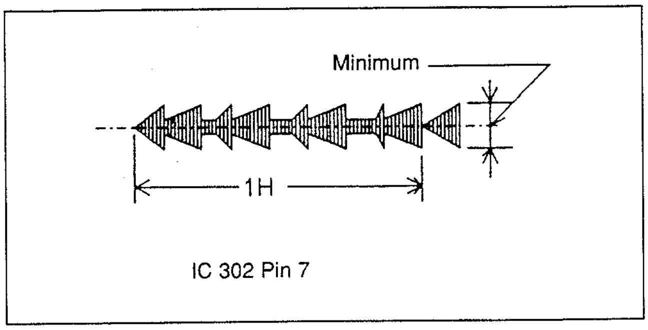


Fig. 23

2.2.13 Einstellung des Secam-Killers (RTV 910 EGC)

Meßpunkt	Einsteller	Betriebsart	Eingang
IC 851 Pin 11	T 851	Aufnahme	Secam Video Signal

Kassette	Meßgeräte	Spezifikation
VHS Kassette	Oszilloskop	

1. Die Secam-Zusatzplatine aus der Luminanz- und Farbteil-Platine auslöten und auf der Lötseite wieder einlöten (Fig. 24).
2. T 851 so einstellen, daß die Punkte „A" das Maximum erreichen (Fig.25).

2.2.13 Secam Killer Adjustment (RTV 910 EGC)

Test point	Adjuster	Mode	Input
IC 851 Pin 11	T 851	Rec. Play	Secam (VIDEO Signal)

Tape	M. EQ.	Specification
VHS Tape	Oscilloscope	

1. Remove the Secam Pack from the Luminance and Chrominance Pack. Reinstall the Secam Pack on foil side and solder the soldering portions (Fig. 24).
2. Adjust T 851 so that the points "A" becomes maximum on the waveform (Fig. 25).

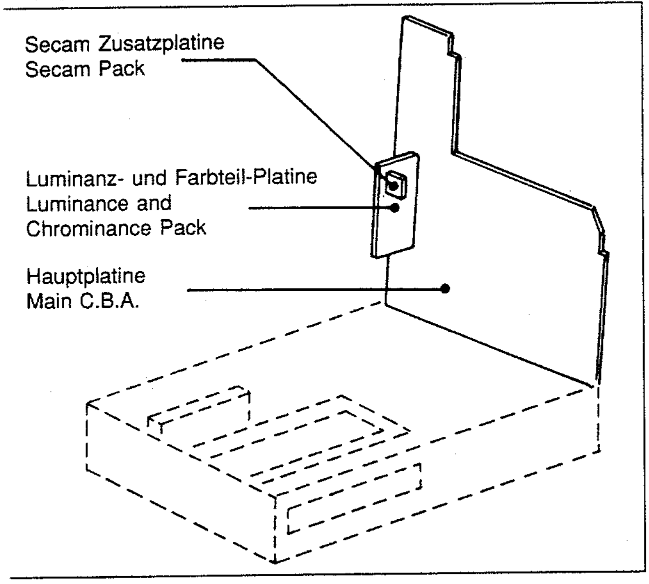


Fig. 24

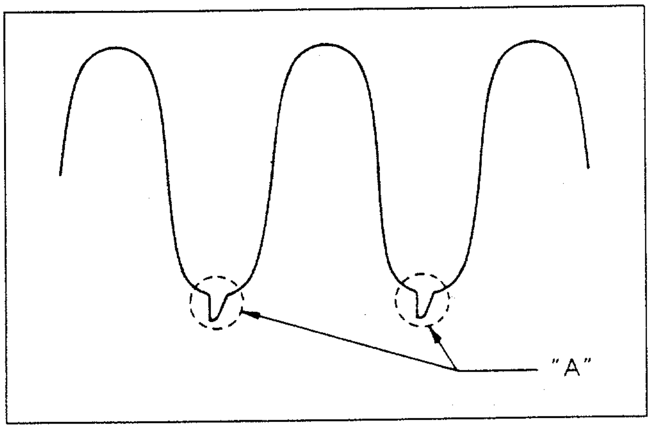


Fig. 25

2.2.14 Einstellung des Farb-Korrektur-Oszillators

Meßpunkt	Einsteller	Betriebsart	Eingang
IC 3301 Pin 10	VR 3301	Stop	

Kassette	Meßgeräte	Spezifikation
	Frequenzzähler	31,25 ± 0,3 KHz

1. Den Frequenzzähler über die Hilfsschaltung (Fig. 26) mit dem IC 3301 Pin 10 verbinden.
2. Mit VR 3301 eine Frequenz von 31,25 ± 0,3 KHz einstellen.

2.2.14 Jump VCO Free Run Adjustment

Test point	Adjuster	Mode	Input
IC 3301 Pin 10	VR 3301	Stop	

Tape	M. EQ.	Specification
	Frequency Counter	31.25 ± 0.3 KHz

1. Connect the Frequency Counter to pin 10 of IC 3301 through the amplifier as shown in Fig. 26.
2. Adjust VR 3301 so that the reading of Frequency Counter is 31.25 ± 0.3 KHz.

Hinweis:
Bevor dieser Abgleich durchgeführt wird, muß der folgende Abgleichpunkt (2.2.15) abgeschlossen sein.

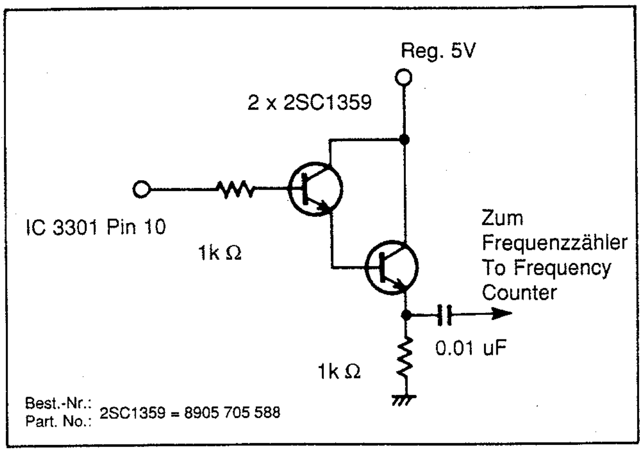

Reg. 5V
2 x 2SC1359
IC 3301 Pin 10
1k Ω
Zum
Frequenzzähler
To Frequency
Counter
0.01 uF
1k Ω
Best.-Nr.:
Part. No.:
2SC1359 = 8905 705 588

Fig. 26

Note:
Prior to make this Adjustment, the Chroma Delay Level Adjustment should be always completed.

2.2.15 Einstellung des Farb-Verzögerungspegels (VHS)

Meßpunkt	Einsteller	Betriebsart	Eingang
Video Out (TP 3002)	VR 3302	Eigenaufnahme	Farbbalkensignal
Kassette	**Meßgeräte**	**Spezifikation**	
VHS-Kassette	Oszilloskop	minimales Zittern	

1. Das Gerät auf „LP“ schalten.
2. Die gerade gemachte Aufnahme wiedergeben. Das Gerät dabei in „CUE“-Stellung schalten.
3. Mit VR 3302 das Signal auf minimales Zittern einstellen (Fig. 27).

2.2.15 Chroma Delay Level Adjustment (VHS)

Test Point	Adjuster	Mode	Input
Video Out (TP 3002)	VR 3302	Self Recording	Colour Bar Signal
Tape	**M. EQ.**	**Specification**	
VHS Tape	Oscilloscope	Flicker is minimized	

1. Set the Tape Speed Selector to LP mode.
2. Play back the just recorded portion in CUE mode.
3. Adjust VR 3302 so the flicker of luminance signal is minimized as shown in Fig. 27.

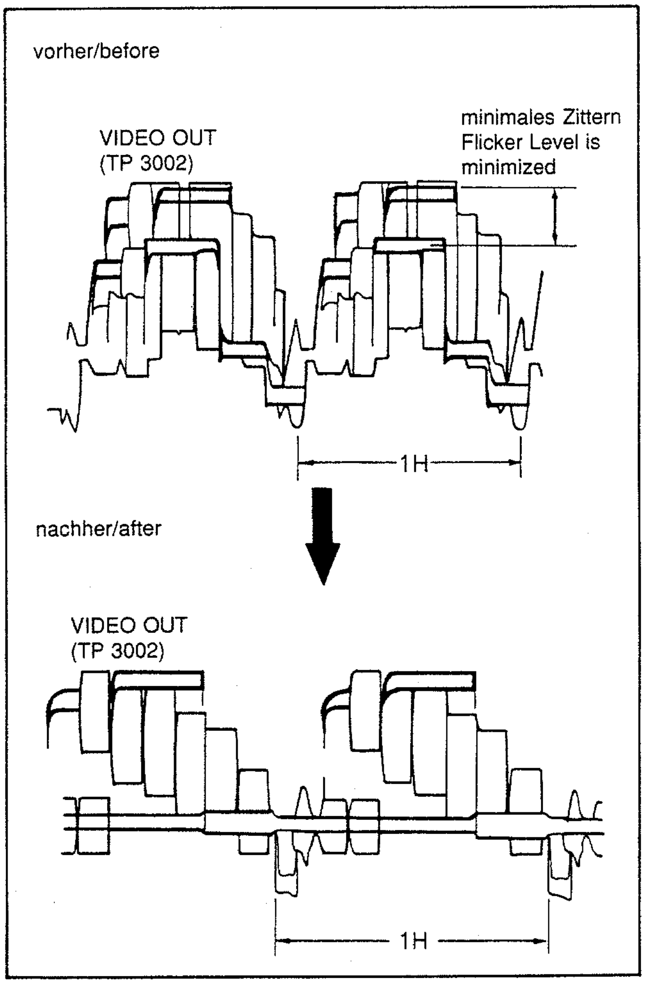

vorher/before
VIDEO OUT
(TP 3002)
minimales Zittern
Flicker Level is
minimized
1H
nachher/after
VIDEO OUT
(TP 3002)
1H

Fig. 27

2.2.16 Einstellung des Farbverzögerungspegels (S-VHS)

Meßpunkt	Einsteller	Betriebsart	Eingang
Video Out (TP 3002)	VR8201 STILL VR8202 CUE	Standbild (STILL) CUE	Farbbalken-signal

Kassette	Meßgeräte	Spezifikation
S-VHS-Kassette	Oszilloskop	minimales Zyan-Zittern

1. Das Oszilloskop am Video-Ausgang oder an TP 3002 anklemmen.
2. Die gerade gemachte Aufnahme wiedergeben und das Gerät auf „Standbild" schalten.
3. Mit VR 8201 das Zyan-Zittern auf Minimum einstellen.
4. Das Gerät auf „CUE" schalten.
5. Mit VR 8202 das Zyan-Zittern auf Minimum einstellen.

2.2.16 Chroma Delay Level Adjustment (S-VHS)

Test Point	Adjuster	Mode	Input
Video Out (TP 3002)	VR8201 STILL VR8202 CUE	STILL CUE	Colour Bar Signal

Tape	M. EQ.	Specification
S-VHS Blank Tape	Oscilloscope	Flicker (Cyan) is minimized

1. Connect the oscilloscope to TP 3002.
2. Play back the just recorded portion in "STILL" mode.
3. Adjust VR 8201 so that the flicker (cyan) level is minimized as shown in Fig. E.
4. Next, place the VTR in CUE mode.
5. Adjust VR 8202 so that the flicker (cyan) level is minimized as shown in Fig. 28.

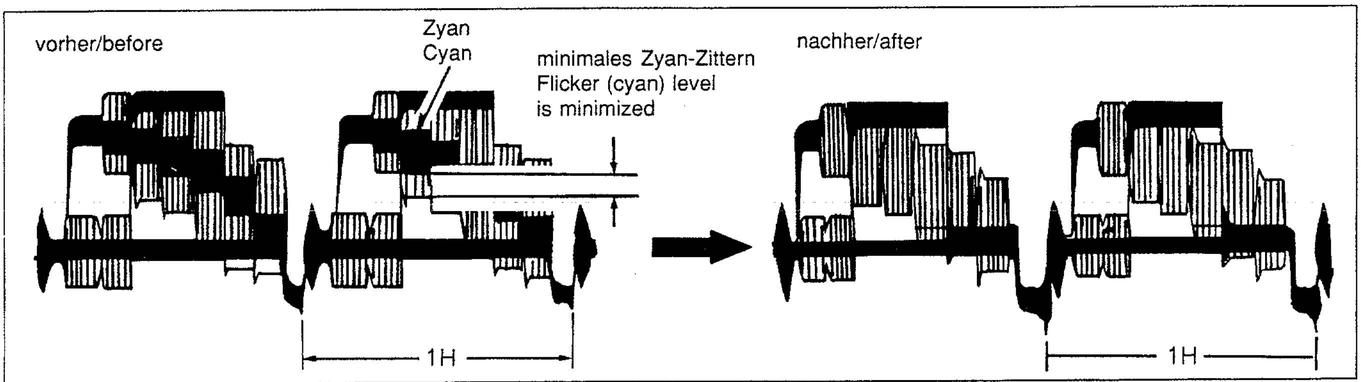


Fig. 28

2.3 Tonteil

2.3.1 Einstellung der Vormagnetisierung

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 4002 (+) TP 4003 (–)	VR 4002	Aufnahme	kein Tonsignal

Kassette	Meßgeräte	Spezifikation
VHS-Kassette	Millivoltmeter	2,5 ± 0,1 mV_{eff}

2.3.2 Einstellung des Tonwiedergabepegels (Normaltonspur)

Meßpunkte	Einsteller	Betriebsart	Eingang
Audio out (TP 4001)	VR 4001	Eigenaufnahme	1 kHz, – 10 dBV Tonsignal Videosignal

Kassette	Meßgeräte	Spezifikation
VHS-Kassette	Sinus-generator Millivoltmeter	E-E Pegel =–8±2dBV (300–500 mV_{eff}) P.B.Pegel = E-E Pegel ± 0,5 dBV (±20 mV_{eff})

1. Das soeben aufgenommene Stück wiedergeben (Normaltonspur).
2. VR 4001 so abgleichen, daß der Wiedergabepegel = E-E ± 0,5 dBV (±20 mV_{eff}) beträgt.

Hinweis:
Vor dieser Einstellung muß der Punkt 12 (Bandaustauschbarkeits-Abgleich) auf den Seiten 1 - 28 bis 1 - 31 durchgeführt werden.

2.3.3 Balance- und Empfindlichkeitseinstellung der Aussteuerungsanzeige

Meßpunkte	Einsteller	Betriebsart	Eingang
	VR 4005 (R) VR 4004 (L) (Bedienteilpl.)	Stop	1 kHz, – 10 dBV (320 mV_{eff})

Kassette	Meßgeräte	Spezifikation
	Sinusgenerator, Millivoltmeter	

1. Mit der AUDIO SELECT-Taste auf Stereo schalten. Die Anzeigen LEFT und RIGHT müssen leuchten.
2. Den Schalter AUDIO RECORDING auf MANUELL schalten.
3. Den Sinusgenerator an die AUDIO-IN-Buchsen (R) und (L) anschließen und ein Signal von 1 kHz – 10 dBV einspeisen. Nun mit den AUDIO REC LEVEL-Reglern an den AUDIO-OUT-Buchsen ein Ausgangssignal von 400 mV_{eff} einstellen.

2.3 Audio Section

2.3.1 Audio Bias Current Adjustment

Test Points	Adjuster	Mode	Input
TP 4002 (+) TP 4003 (–)	VR 4002	Rec. Play	no Audio signal

Tape	M. EQ.	Specification
VHS Tape	Millivoltmeter	2.5 ± 0.1 mV_{rms}

2.3.2 Audio Playback Level Adjustment (Normal Mode)

Test Points	Adjuster	Mode	Input
Audio out (TP 4001)	VR 4001	Self recording	1 kHz, – 10 dBV Audio Signal Video Signal

Tape	M. EQ.	Specification
VHS-Tape	Signal generator Millivoltmeter	E-E Level =–8±2dBV (300–500 mV_{rms}) P.B.Level = E-E Level ± 0.5 dBV (±20 mV_{rms})

1. Playback the just recorded portion (Normal Audio Mode).
2. Adjust VR 4001 so that the level of the playback waveform becomes E-E level ± 0.5 dBV (±20 mV_{rms}).

Note:
Before this adjustment "Tape Interchangeability Adjustment" (page 1 - 28 to 1 - 31) must be completed.

2.3.3 Level Meter Sensitivity and Balance Adjustment

Test Points	Adjuster	Mode	Input
	VR 4005 (R) VR 4004 (L) (Operation C.B)	Stop	1 kHz, – 10 dBV (320 mV_{rms})

Tape	M. EQ.	Specification
	Signal generator, Millivoltmeter	

1. Set the AUDIO SELECT SW to STEREO position. (Both the Left and Right Indicators are lit.)
2. Set the AUDIO RECORDING SW to MANUAL position.
3. Set the output of the Signal Generator to 1 kHz and –10 dBV, and supply it to both Input Jacks (L) and (R). Next, Adjust the recording volume with the AUDIO REC LEVEL Controls so that the audio outputs are 400 mV_{rms} at both Output Jacks (L) and (R).

4. VR 4004 so einstellen, daß die Aussteuerungsanzeige für den linken Kanal gerade 0 dB anzeigt.
5. VR 4005 so einstellen, daß die Aussteuerungsanzeige für den rechten Kanal gerade 0 dB anzeigt.

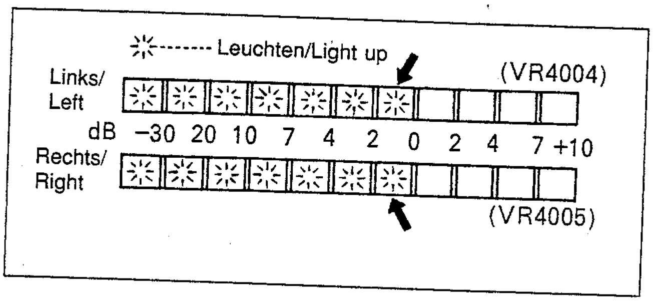


Fig. 29

4. Adjust VR 4004 so that the 0 dB indication at the L-ch level meter just lights up.
5. Adjust VR 4005 so that the 0 dB indicator lights up on the R-ch level meter.

2.3.4 Einstellung des FM-Audio-Aufnahmestromes (Stereo-Tonspur)

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 4507 (Heiß) und Abschirmung	VR 4503	Aufnahme	
Kassette	**Meßgeräte**	**Spezifikation**	
VHS Kassette	Oszilloskop	220 ± 10 mV_{ss}	

1. Den INPUT-SELECT-Wahlschalter auf LINE/AUDIO stellen.
2. Das Oszilloskop an TP 4507 (Kopfverstärker) anklemmen.
3. Mit VR 4503 (FM-Tonteil-Platine) einen Aufnahmestrom von 220 ± 10 mV_{ss} einstellen.

2.3.5 Einstellung des Audio-Umschaltimpulses

Meßpunkte	Einsteller	Betriebsart	Eingang
TP 4511 TP 2001	VR 4510 (Tonteil)	Eigenaufnahme	1 kHz, –10 dBV
Kassette	**Meßgeräte**	**Spezifikation**	
VHS Kassette	Sinusgenerator Oszilloskop		

1. Mit dem AUDIO-SELECT-Taster auf Stereo schalten (LEFT und RIGHT leuchten auf).
2. Den Sinusgenerator an die beiden Eingangsbuchsen (AUDIO IN) anschließen.
3. Eine Aufnahme durchführen und diese wiedergeben (HIFI-Tonspur).
4. Den Einsteller VR 4510 drehen und dabei den Ton anhören.
   - Den Einsteller VR 4510 nach rechts drehen, bis der Ton verzerrt. Den Abstand (T1) ablesen.
   - Nun den Einsteller VR 4510 nach links drehen, bis der Ton verzerrt. Den Abstand (T2) ablesen.
   - Der richtige Abstand (T) liegt genau zwischen den Punkten (T2 und T1), siehe Fig. 30.

2.3.4 FM Audio Recording Current Adjustment (Stereo Mode)

Test Points	Adjuster	Mode	Input
TP 4507 (HOT) and Shield Case	VR 4503	Rec. Play	
Tape	**M. EQ.**	**Specification**	
VHS Tape	Oscilloscope	220 ± 10 $mV_{p\text{-}p}$	

1. Set the INPUT SELECT SW to the LINE/AUDIO position.
2. Connect the oscilloscope to TP 4507 (Head Amp. Pack).
3. Adjust VR 4503 (FM Audio C.B.A.) for 220 ± 10 $mV_{p\text{-}p}$.

2.3.5 Playback Audio SW Adjustment

Test Points	Adjuster	Mode	Input
TP 4511 TP 2001	VR 4510 (Audio section)	Self recording	1 kHz, –10 dBV
Tape	**M. EQ.**	**Specification**	
VHS Tape	Signal generator Oscilloscope		

1. Set the AUDIO SELECT SW of the deck to STEREO mode.
2. Connect the signal generator output to the both Input Jacks (L) and (R).
3. Playback the just recorded portion (HiFi track).
4. Adjust the Playback Audio SW VR 4510 while listening to the stereo playback sound.
   - Confirm the T1 time when the abnormal sound just occurs during tuning clockwise on VR 4510.
   - Confirm the T2 time when the abnormal sound just occurs during tuning counter clockwise on VR 4510.
   - Adjust VR 4510 so that the falling edge T of the SHIFT H. SW pulse becomes the center portion of the both T2 and T1 (Fig. 30).

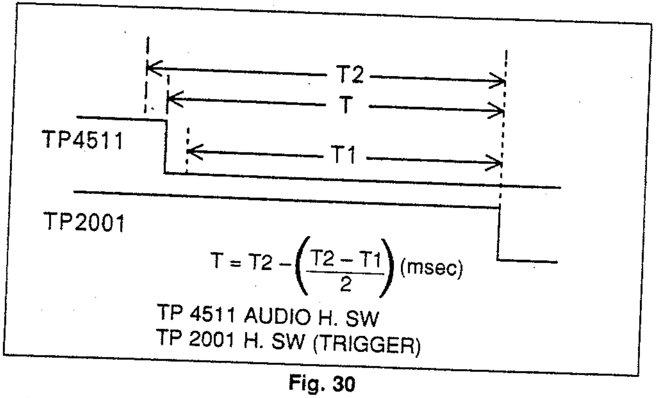


Fig. 30

2.3.6 Einstellung der automatischen Tonspurumschaltung

Meßpunkte	Einsteller	Betriebsart	Eingang
	VR 4505	Eigenaufnahme	Videosignal
Kassette	**Meßgeräte**	**Spezifikation**	
VHS Kassette			

Hinweis:
Vor dieser Einstellung muß der Punkt 12 (Bandaustauschbarkeits-Abgleich) auf den Seiten 1 - 28 bis 1 - 31 durchgeführt werden.

1. Eine Aufnahme durchführen und diese wiedergeben.

2.3.6 Audio Muting Adjustment

Test Points	Adjuster	Mode	Input
	VR 4505	Self recording	Video Signal
Tape	**M. EQ.**	**Specification**	
VHS Tape			

Note:
Before this adjustment "Tape Interchangeability Adjustment" (page 1 - 28 to 1 - 31) must be completed.

1. Play back the just recorded portion.

2. Mit dem AUDIO-SELECT-Taster auf „Stereo" schalten. Die Anzeigen für LEFT und RIGHT müssen leuchten.
3. Den TRACKING-Regler auf maximale HiFi-Trackinganzeige einstellen (Raststellung).
4. Den Einsteller VR 4505 zuerst so einstellen, daß die Anzeige von STEREO auf NORMAL schaltet. Anschließend zurückdrehen, bis wieder STEREO angezeigt wird und die HiFi-Trackinganzeige gerade das Maximum erreicht.

2.3.7 Einstellung der FM-Träger

Meßpunkte	Einsteller	Betriebsart	Eingang
IC 4502 Pin 11 (L) Pin 20 (R)	VR 4501 (L) VR 4509 (R)	Stop oder Aufnahme	

Kassette	Meßgeräte	Spezifikation
VHS-Kassette	Frequenzzähler	1,4 MHz ± 10 kHz (L) 1,8 MHz ± 10 kHz (R)

2.3.8 Einstellung des Audio-FM-Hubs

Meßpunkte	Einsteller	Betriebsart	Eingang
IC4502 Pin5(L) IC4502 Pin26(R)	VR 4502 (L) VR 4507 (R)	Stop	1 kHz, –10 dBV Audiosignal

Kassette	Meßgeräte	Spezifikation
VHS-Kassette	Digitalvoltmeter Sinusgenerator Oszilloskop	L, R: 280 ± 5 mV_{ss}

1. Den AUDIO RECORDING-Schalter in Stellung MANUAL schalten.
2. Vom Sinusgenerator 1 kHz –10 dBV (320 mV_{eff}) in die Audio-Buchsen einspeisen.
3. Dann mit den AUDIO REC LEVEL-Reglern an den AUDIO OUT-Buchsen einen Ausgangspegel von 141 mV_{eff} (400 mV_{ss}) einstellen.
4. Mit VR 4502 am IC 4502, Pin 5, 280 ± 5 mV_{ss} einstellen.
5. Mit VR 4507 am IC 4502, Pin 26, 280 ± 5 mV_{ss} einstellen.

2.3.9 Einstellung der Audio-Wiedergabepegel

Meßpunkt	Einsteller	Betriebsart	Eingang
AUDIO-OUT-Buchsen	VR 4001 (Normal) VR 4504 (CH 1) VR 4508 (CH 2)	Eigenaufnahme	1 kHz, – 10 dBV Audiosignal und Videosignal

Kassette	Meßgeräte	Spezifikation
VHS-Kassette	Millivoltmeter Sinusgenerator	E-E Pegel = – 8 dBV ± 2 dBV Playback-Pegel = E-E ± 0,5 dBV

E-E Pegel = Durchschleifpegel Playback-Pegel = Wiedergabepegel

Hinweis:
Vor dieser Einstellung muß der Punkt 12 (Bandaustauschbarkeits-Abgleich) auf den Seiten 1-28 bis 1-31 durchgeführt werden.
1. Eine Aufnahme durchführen und diese wiedergeben.
2. Mit den Einstellern VR 4001 (Normalspur) VR 4504 (Stereo CH 1-L) und VR 4508 (Stereo CH 2-R) die Wiedergabepegel auf die Größe der Durchschleifpegel einstellen (E-E ± 0,5 dBV).

2.4 Timerteil

2.4.1 Einstellung des Clock-Impulses (IC 7501)

Meßpunkte	Einsteller	Betriebsart	Eingang
Display Pin 5 (IC7501 Pin37)	C 7502	Stop	

Kassette	Meßgeräte	Spezifikation
	Frequenzzähler Netzgerät	3906.25 ± 0,008 µs

Hinweis:
Den Netzstecker nicht einstecken. C 7571 (Hauptplatine) entladen! Triggerbaren Frequenzzähler verwenden.
1. Die Spannung des Netzgerätes auf 5,8 ± 0,1 V einstellen und am Stecker P 7506 Pin 6 (+) und GND einspeisen.
2. Den Pin 5 des Steckers P 7506 nach Masse (GND) kurzschließen.
3. Den Frequenzzähler am Display Pin 5 (IC 7501 Pin 37) anklemmen.
4. Mit C 7502 eine Periodendauer von 3906,25 ± 0,008 µs einstellen.
5. Bei korrekt eingestellter Timer-Taktfrequenz darf die angezeigte Uhrzeit 8 sec pro Monat von der realen Zeit abweichen.

2. Set the AUDIO SELECT SW to the STEREO position.
3. Adjust the TRACKING VR so that the HiFi Tracking level becomes maximum.
4. Preadjust VR 4505 until the HiFi indication on the front panel display turns the NORMAL indication. Then slowly adjust VR 4505 where the STEREO indication turns ON and the HiFi Tracking level just becomes maximum.

2.3.7 FM Audio Carrier Frequency Adjustment

Test Points	Adjuster	Mode	Input
IC 4502 Pin 11 (L) Pin 20 (R)	VR 4501 (L) VR 4509 (R)	Stop or Recording	

Tape	M. EQ.	Specification
VHS Tape	Frequency Counter	1.4 MHz ± 10 kHz (L) 1.8 MHz ± 10 kHz (R)

2.3.8 Audio Deviation Adjustment

Test Points	Adjuster	Mode	Input
IC 4502 Pin 5 (L) IC 4502 Pin 26 (R)	VR 4502 (L) VR 4507 (R)	Stop	1 kHz, –10 dBV Audio Signal

Tape	M. EQ.	Specification
VHS Tape	Signal Generator D.V.M. Oscilloscope	280 ± 5 $mV_{p\text{-}p}$ (L) (R)

1. Set the AUDIO RECORDING SW to MANUAL position.
2. Set the output of the Signal generator to 1 kHz and –10 dBV (320 mV_{rms}), and supply it to both input Jacks (L) and (R).
3. Next, adjust the recording with the AUDIO REC LEVEL Controls so that the Audio outputs are 141 mV_{rms} (400 $mV_{p\text{-}p}$) at both Output Jacks (L) and (R).
4. Adjust VR 4502 for 280 ± 5 $mV_{p\text{-}p}$ at IC 4502 Pin 5.
5. Adjust VR 4507 for 280 ± 5 $mV_{p\text{-}p}$ at IC 4502 Pin 26.

2.3.9 Audio Playback Level Adjustment

Test Point	Adjuster	Mode	Input
AUDIO OUT	VR 4001 (Normal) VR 4504 (CH 1) VR 4508 (CH 2)	Self recording	1 kHz, – 10 dBV Audiosignal and Videosignal

Tape	M. EQ.	Specification
VHS Tape	Millivoltmeter Signal generator	E-E Level = – 8 ± 2 dBV Playback-Level = E-E Level ± 0.5 dBV

Note:
Before this adjustment "Tape Interchangeability Adjustment" (page 1-28 to 1-31) must be completed.
1. Play back the just recorded portion.
2. Adjust VR 4001 (NORMAL mode) VR 4504 (STEREO mode CH 1-L) and VR 4508 (STEREO mode CH 2-R) volumes one by one, so that the level of the playback becomes E-E level ± 0.5 dBV.

2.4 Timer Section

2.4.1 IC 7501 Clock Adjustment

Test Points	Adjuster	Mode	Input
Display Pin 5 (IC7551 Pin37)	C 7502	Stop	

Tape	M. EQ.	Specification
	Frequency counter DC Power Supply	3906.25 ± 0.008 µs

Note:
Do not connect the AC power plug. Make a short circuit of C 7571 (Main C.B.A.) to discharge.
Use a frequency counter which may be triggered.
1. Set the voltage of the DC Power Supply for 5.8 ± 0.1 and supply to P 7506-6 (+) and GND.
2. Connect a jumper wire between P 7506-5 and GND.
3. Connect the frequency counter to Display Pin 5 (IC 7501-37).
4. Adjust C 7502 for 3906.25 ± 0.008 µsec.
5. With a correctly set pulse frequency the displayed time may deviate 8 sec. from the real time.

2.4.2 Einstellung der Stumm-Schaltung

Meßpunkte	Einsteller	Betriebsart	Eingang
IC 7651 Pin 4	VR 7660		

Kassette	Meßgeräte	Spezifikation
	Frequenzzähler Netzgerät	15625 ± 50 Hz

Hinweis:
Den Widerstand R 7655 (Tuner/ARU-Platine) kurzschließen.

1. Den Frequenzzähler über die Hilfsschaltung (Fig. 31) an IC 7651 Pin 4 anklemmen.
2. Mit VR 7660 eine Frequenz von 15625 Hz ± 50 Hz einstellen.

2.4.2 Timer Muting Frequency Adjustment

Test Points	Adjuster	Mode	Input
IC 7651 Pin 4	VR 7660		

Tape	M. EQ.	Specification
	Frequency counter DC Power Supply	15625 ± 50 Hz

Note:
Connect a jumper wire to both side of R 7655 (Tuner/ARU C.B.A.).

1. Connect the frequency counter through the amplifier circuit as shown in Fig. 31.
2. Adjust VR 7660 so that the reading of the frequency counter is 15625 ± 0.05 Hz.

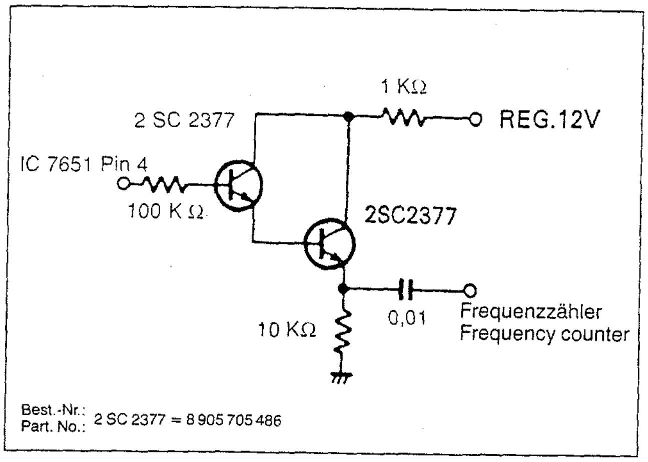
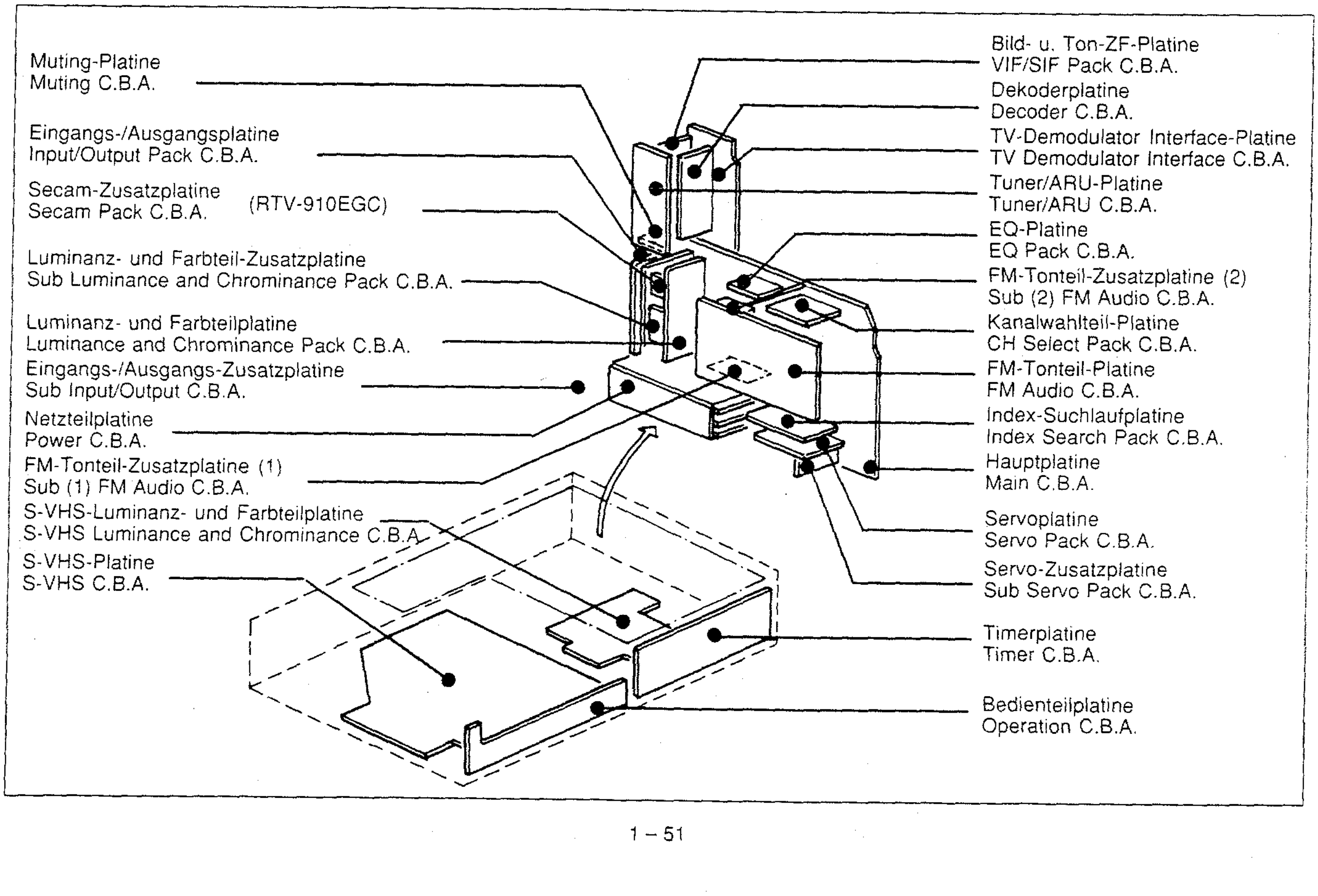

1 KΩ
2 SC 2377
REG.12V
IC 7651 Pin 4
100 KΩ
2SC2377
10 KΩ
0,01
Frequenzzähler
Frequency counter
Best.-Nr.:
Part. No.: 2 SC 2377 = 8 905 705 486

Fig. 31

Lage der Platinen im Gerät

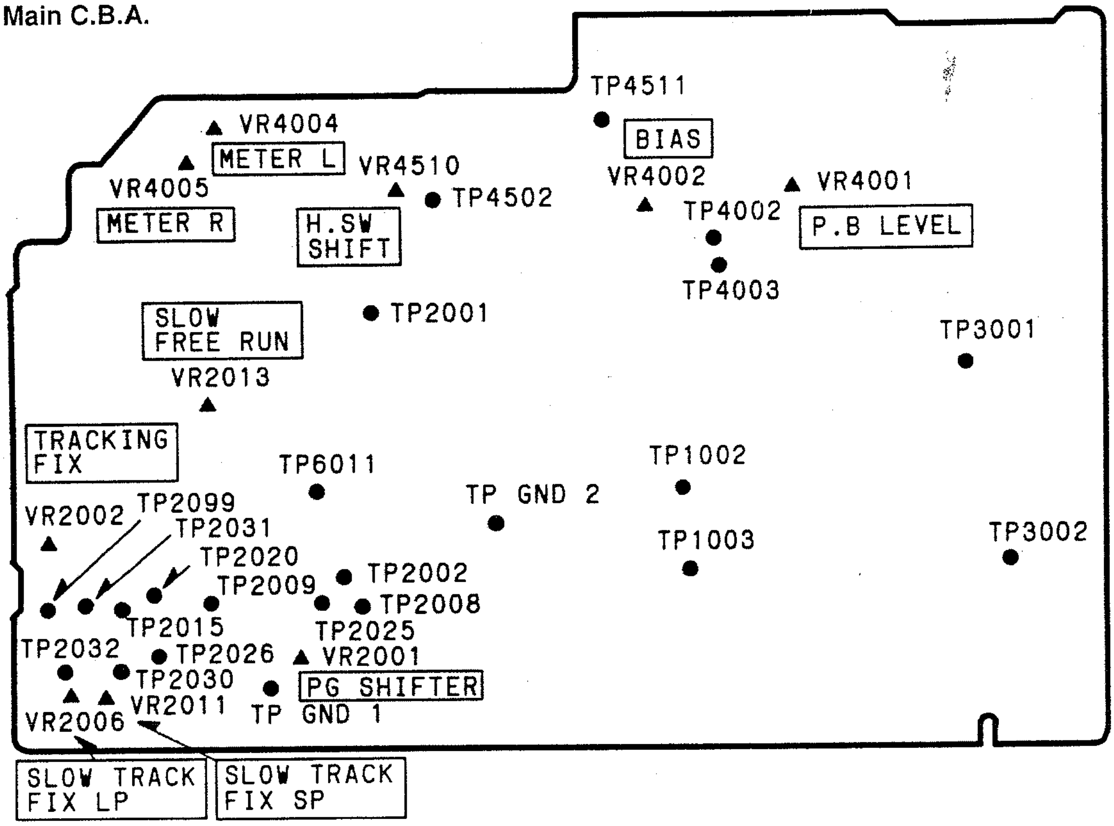
Position of C.B.A. inside the unit


Muting-Platine
Muting C.B.A.
Eingangs-/Ausgangsplatine
Input/Output Pack C.B.A.
Secam-Zusatzplatine
Secam Pack C.B.A. (RTV-910EGC)
Luminanz- und Farbteil-Zusatzplatine
Sub Luminance and Chrominance Pack C.B.A.
Luminanz- und Farbteilplatine
Luminance and Chrominance Pack C.B.A.
Eingangs-/Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.
Netzteilplatine
Power C.B.A.
FM-Tonteil-Zusatzplatine (1)
Sub (1) FM Audio C.B.A.
S-VHS-Luminanz- und Farbteilplatine
S-VHS Luminance and Chrominance C.B.A.
S-VHS-Platine
S-VHS C.B.A.
Bild- u. Ton-ZF-Platine
VIF/SIF Pack C.B.A.
Dekoderplatine
Decoder C.B.A.
TV-Demodulator Interface-Platine
TV Demodulator Interface C.B.A.
Tuner/ARU-Platine
Tuner/ARU C.B.A.
EQ-Platine
EQ Pack C.B.A.
FM-Tonteil-Zusatzplatine (2)
Sub (2) FM Audio C.B.A.
Kanalwahlteil-Platine
CH Select Pack C.B.A.
FM-Tonteil-Platine
FM Audio C.B.A.
Index-Suchlaufplatine
Index Search Pack C.B.A.
Hauptplatine
Main C.B.A.
Servoplatine
Servo Pack C.B.A.
Servo-Zusatzplatine
Sub Servo Pack C.B.A.
Timerplatine
Timer C.B.A.
Bedienteilplatine
Operation C.B.A.

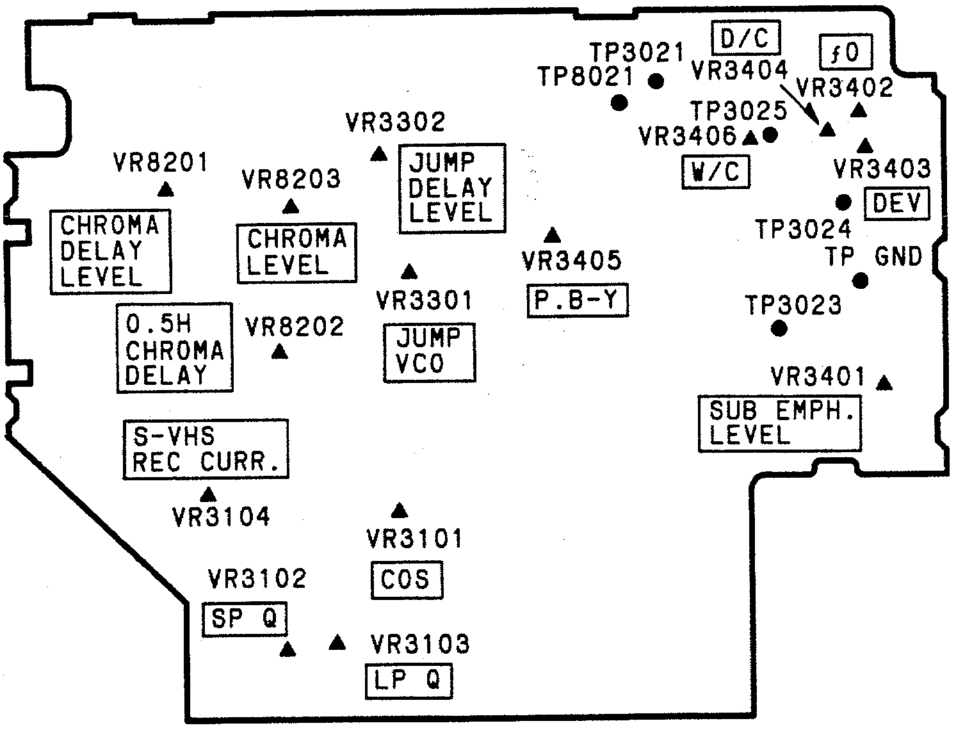
Lage der Meßpunkte und Einsteller

Location of Testpoints and Adjusters

Hauptplatine
Main C.B.A.


TP4511
BIAS
VR4004
METER L
VR4510
VR4005
TP4502
VR4002
VR4001
METER R
H.SW SHIFT
TP4002
P.B LEVEL
TP4003
SLOW FREE RUN
TP2001
TP3001
VR2013
TRACKING FIX
TP6011
TP1002
TP GND 2
VR2002
TP2099
TP2031
TP1003
TP3002
TP2020
TP2002
TP2009
TP2008
TP2015
TP2025
TP2032
TP2026
VR2001
TP2030
PG SHIFTER
VR2011
TP GND 1
VR2006
SLOW TRACK FIX LP
SLOW TRACK FIX SP

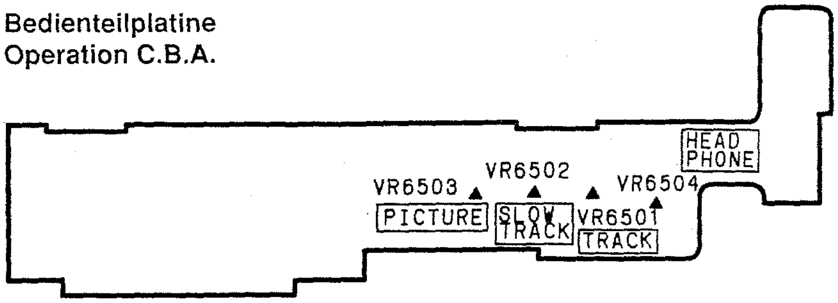
S-VHS-Platine
S-VHS C.B.A.


D/C
ƒ0
TP3021
TP8021
VR3404
VR3402
VR3302
TP3025
VR3406
VR8201
VR8203
JUMP DELAY LEVEL
W/C
VR3403
DEV
CHROMA DELAY LEVEL
CHROMA LEVEL
TP3024
VR3405
TP GND
VR3301
P.B-Y
TP3023
0.5H CHROMA DELAY
VR8202
JUMP VCO
VR3401
SUB EMPH. LEVEL
S-VHS REC CURR.
VR3104
VR3101
COS
VR3102
SP Q
VR3103
LP Q

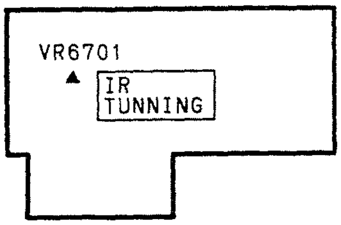
Lage der Meßpunkte und Einsteller

Location of Testpoints and Adjusters

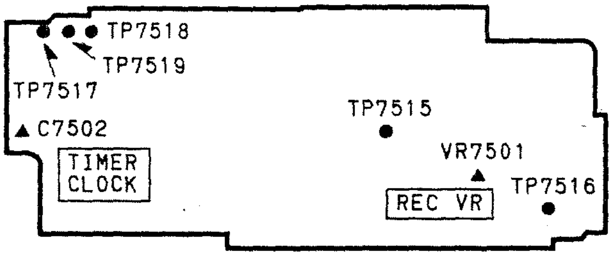
Bedienteilplatine
Operation C.B.A.


HEAD
PHONE
VR6503
PICTURE
VR6502
SLOW
TRACK
VR6501
TRACK
VR6504

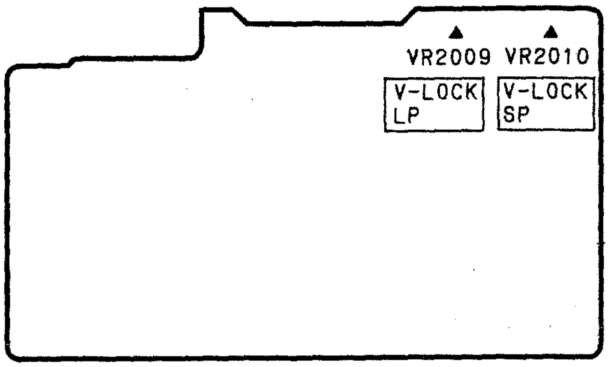
IR-Empfängerplatine
IR Receiver C.B.A.


VR6701
IR
TUNNING

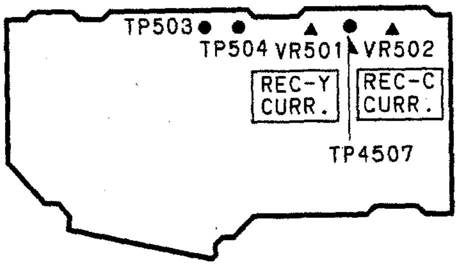
Timerplatine
Timer C.B.A.


TP7518
TP7519
TP7517
C7502
TIMER
CLOCK
TP7515
VR7501
REC VR
TP7516

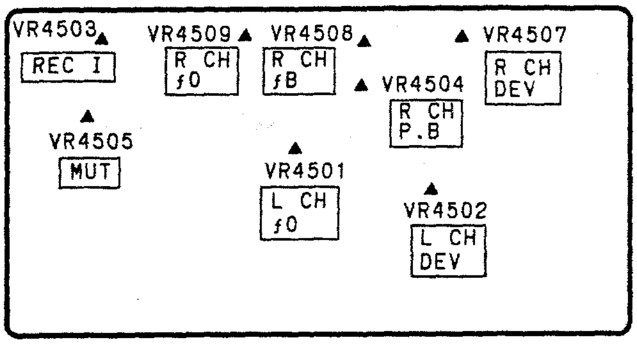
Servo-Zusatzplatine
Servo Pack C.B.A.


VR2009
VR2010
V-LOCK
LP
V-LOCK
SP

Kopfverstärkerplatine
Head Amp C.B.A.


TP503
TP504
VR501
VR502
REC-Y
CURR.
REC-C
CURR.
TP4507

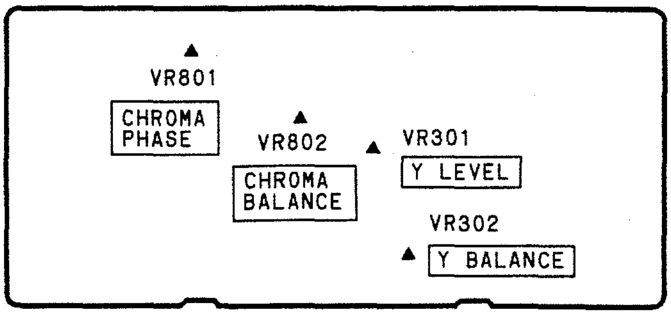
FM-Tonteil-Platine
FM Audio C.B.A.


VR4503
REC I
VR4509
R CH
ƒ0
VR4508
R CH
ƒB
VR4507
R CH
DEV
VR4504
R CH
P.B
VR4505
MUT
VR4501
L CH
ƒ0
VR4502
L CH
DEV

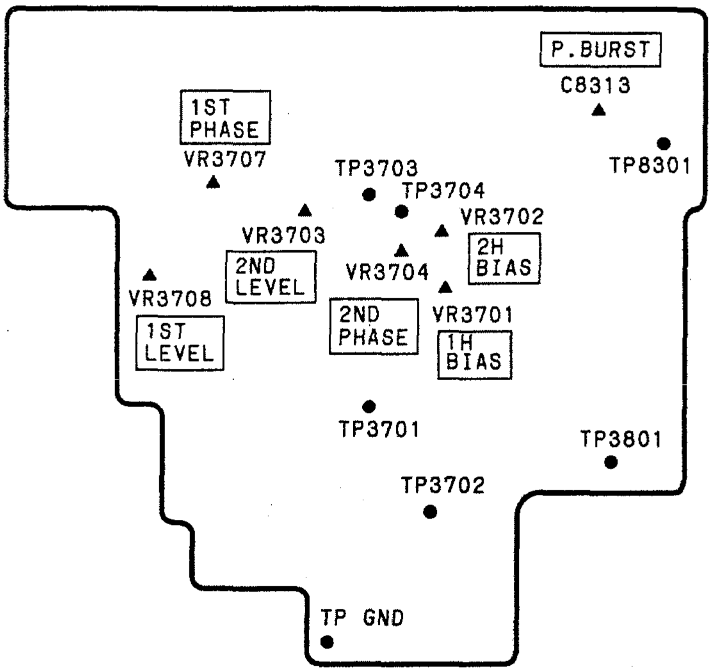
Lage der Meßpunkte und Einsteller

Location of Testpoints and Adjusters

Luminanz- und Farbteil-Zusatzplatine
Luminance and Chrominance Pack C.B.A.

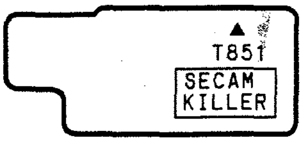

VR801
CHROMA PHASE
VR802
CHROMA BALANCE
VR301
Y LEVEL
VR302
Y BALANCE

S-VHS-Luminanz- und Farbteil-Platine
S-VHS Luminance and Chrominance C.B.A.


P.BURST
C8313
TP8301
1ST PHASE
VR3707
TP3703
TP3704
VR3702
2H BIAS
VR3703
2ND LEVEL
VR3704
VR3708
1ST LEVEL
2ND PHASE
VR3701
1H BIAS
TP3701
TP3801
TP3702
TP GND

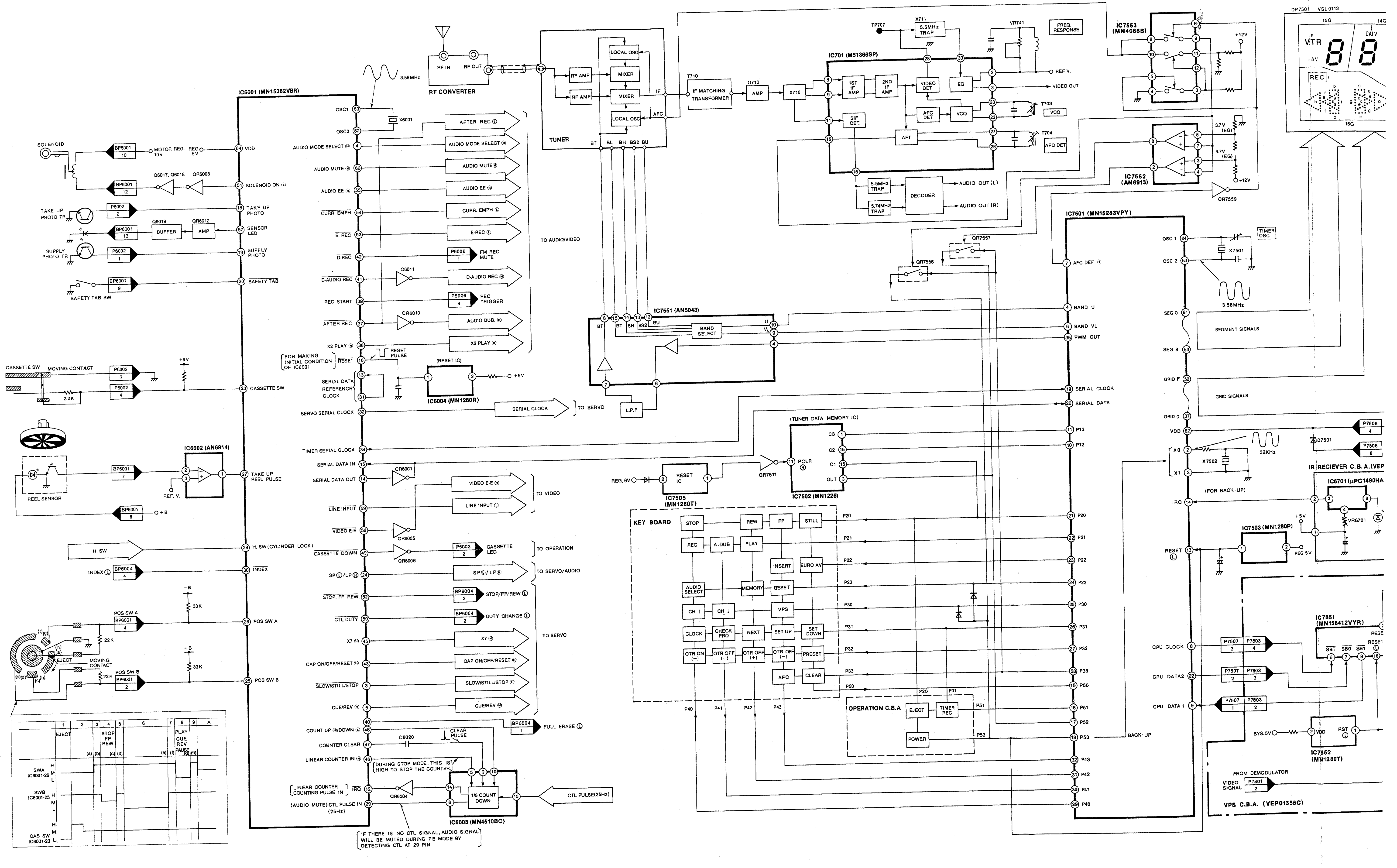
Secam-Zusatzplatine
Secam Pack C.B.A.

(RTV 910 EGC)


T851
SECAM KILLER

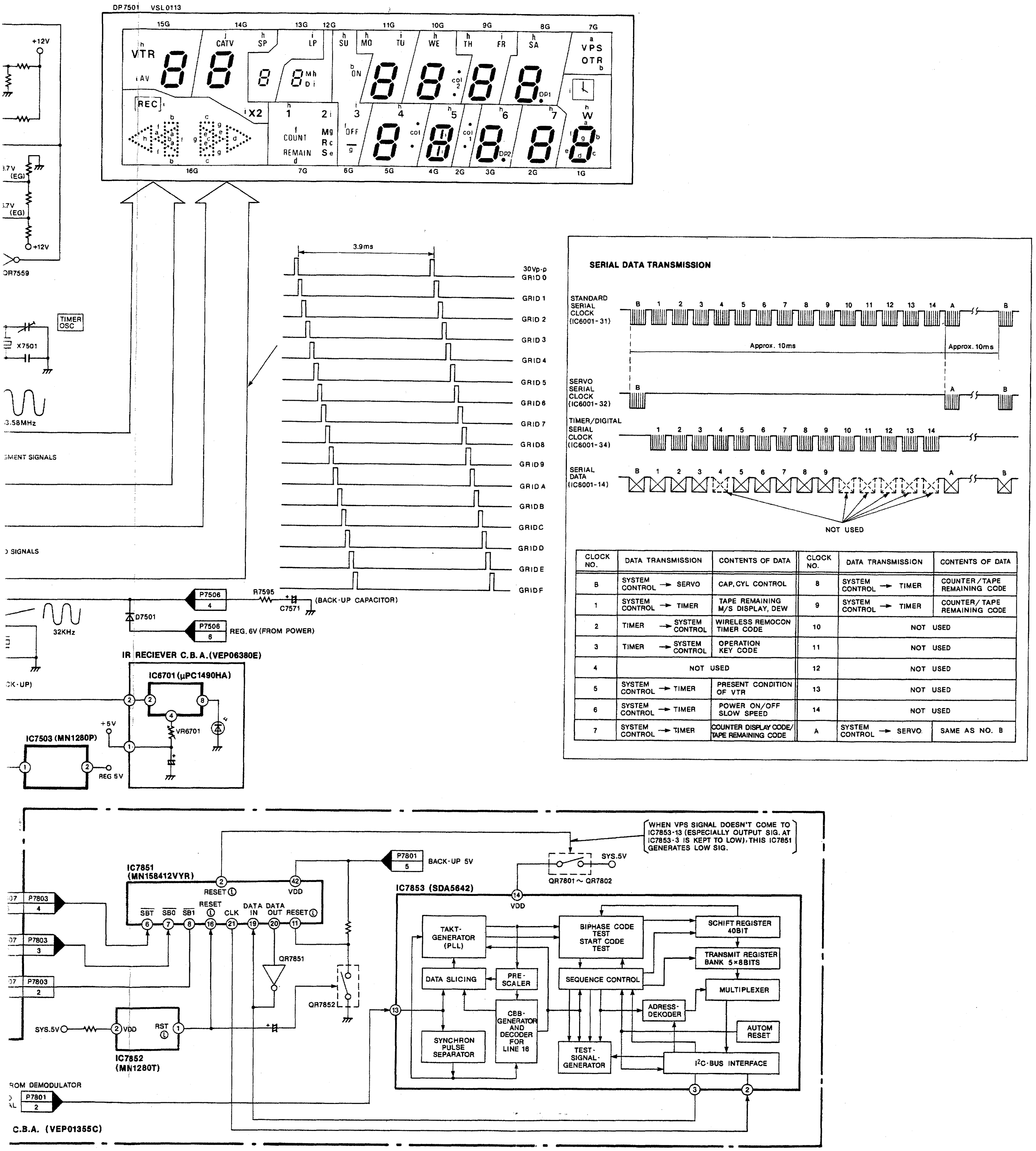
Blockschaltbild System-Steuerungsteil
Block Diagram System Control

Blocks
Block



IC6001 (MN15362VBR)
SOLENOID
BP6001 10
MOTOR REG. REG 10V 5V
VDD
Q6017, Q6018 QR6008
BP6001 12
SOLENOID ON
TAKE UP PHOTO TR
P6002 2
TAKE UP PHOTO
Q6019 BUFFER
QR6012 AMP
BP6001 13
SENSOR LED
SUPPLY PHOTO TR
P6002 1
SUPPLY PHOTO
BP6001 9
SAFETY TAB
SAFETY TAB SW
CASSETTE SW
MOVING CONTACT
P6002 3
P6002 4
2.2K
+5V
CASSETTE SW
IC6002 (AN6914)
BP6001 7
REF. V.
REEL SENSOR
TAKE UP REEL PULSE
BP6001 6
+B
H. SW
H. SW (CYLINDER LOCK)
INDEX
BP6004 4
POS SW A
BP6001 4
33K
22K
EJECT
MOVING CONTACT
POS SW B
BP6001 2
OSC1
OSC2
X6001
3.58MHz
AUDIO MODE SELECT
AUDIO MUTE
AUDIO EE
CURR. EMPH
E. REC
D-REC
D-AUDIO REC
REC START
AFTER REC
X2 PLAY
RESET
RESET PULSE
FOR MAKING INITIAL CONDITION OF IC6001
SERIAL DATA REFERENCE CLOCK
SERVO SERIAL CLOCK
(RESET IC)
IC6004 (MN1280R)
+5V
AFTER REC
AUDIO MODE SELECT
AUDIO MUTE
AUDIO EE
CURR. EMPH
E-REC
P6006 1
FM REC MUTE
Q6011
D-AUDIO REC
P6006 4
REC TRIGGER
QR6010
AUDIO DUB.
X2 PLAY
TO AUDIO/VIDEO
SERIAL CLOCK
TO SERVO
L.P.F
TIMER SERIAL CLOCK
SERIAL DATA IN
SERIAL DATA OUT
QR6001
LINE INPUT
VIDEO E-E
QR6005
CASSETTE DOWN
QR6006
SP/LP
STOP. FF. REW
CTL DUTY
X7
CAP ON/OFF/RESET
SLOW/STILL/STOP
CUE/REV
COUNT UP /DOWN
COUNTER CLEAR
LINEAR COUNTER IN
LINEAR COUNTER COUNTING PULSE IN
IRQ
(AUDIO MUTE) CTL PULSE IN (25Hz)
VIDEO E-E
LINE INPUT
TO VIDEO
P6003 2
CASSETTE LED
TO OPERATION
SP/LP
TO SERVO/AUDIO
BP6004 3
STOP/FF/REW
BP6004 2
DUTY CHANGE
X7
CAP ON/OFF/RESET
SLOW/STILL/STOP
CUE/REV
TO SERVO
BP6004 1
FULL ERASE
C6020
CLEAR PULSE
DURING STOP MODE, THIS IS HIGH TO STOP THE COUNTER
QR6004
1/5 COUNT DOWN
IC6003 (MN4510BC)
CTL PULSE (25Hz)
IF THERE IS NO CTL SIGNAL, AUDIO SIGNAL WILL BE MUTED DURING PB MODE BY DETECTING CTL AT 29 PIN
EJECT
STOP FF REW
PLAY CUE REV PAUSE
SWA IC6001-26
SWB IC6001-25
CAS SW IC6001-23
H M L
RF IN
RF OUT
RF CONVERTER
TUNER
LOCAL OSC
MIXER
RF AMP
IF
AFC
BT BL BH BS2 BU
IC7551 (AN5043)
BAND SELECT
T710
IF MATCHING TRANSFORMER
Q710 AMP
X710
TP707
X711 5.5MHz TRAP
VR741
FREQ. RESPONSE
IC701 (M51366SP)
1ST IF AMP
2ND IF AMP
VIDEO DET
EQ
REF V.
VIDEO OUT
SIF DET.
APC DET
VCO
T703
AFT
T704
AFC DET
5.5MHz TRAP
5.74MHz TRAP
DECODER
AUDIO OUT (L)
AUDIO OUT (R)
IC7553 (MN4066B)
+12V
IC7552 (AN6913)
3.7V (EG)
5.7V (EG)
QR7559
IC7501 (MN15283VPY)
AFC DEF
BAND U
BAND VL
PWM OUT
SERIAL CLOCK
SERIAL DATA
P13
P12
QR7557
QR7556
OSC 1
OSC 2
X7501
TIMER OSC
3.58MHz
SEG 0
SEG 8
SEGMENT SIGNALS
GRID F
GRID SIGNALS
GRID 0
VDD
X0
X1
X7502
32KHz
(FOR BACK-UP)
IRQ
RESET
CPU CLOCK
CPU DATA2
CPU DATA 1
(TUNER DATA MEMORY IC)
C3 C2 C1
PCLR
OUT
IC7502 (MN1226)
QR7511
REG. 6V
RESET IC
IC7505 (MN1280T)
KEY BOARD
STOP
REW
FF
STILL
REC
A.DUB
PLAY
INSERT
EURO AV
AUDIO SELECT
MEMORY
RESET
CH ↑
CH ↓
VPS
CLOCK
CHECK PRO
NEXT
SET UP
SET DOWN
OTR ON (+)
OTR OFF (−)
OTR OFF (+)
OTR OFF (−)
PRESET
AFC
CLEAR
P20 P21 P22 P23 P30 P31 P32 P33 P50
P40 P41 P42 P43
OPERATION C.B.A
EJECT
TIMER REC
POWER
P51 P52 P53
BACK-UP
DP7501 VSL0113
15G 14G 16G
VTR
CATV
AV
REC
P7506 4
P7506 6
D7501
IR RECIEVER C. B. A. (VEP
IC6701 (μPC1490HA
VR6701
+5V
IC7503 (MN1280P)
REG 5V
IC7851 (MN158412VYR)
SBT SB0 SB1
P7507 P7803
SYS.5V
VDD
RST
IC7852 (MN1280T)
FROM DEMODULATOR
VIDEO SIGNAL
P7801 2
VPS C.B.A. (VEP01355C)

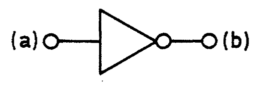
Blockschaltbild System-Steuerungsteil
Block Diagram System Control


DP7501 VSL0113
15G
14G
13G
12G
11G
10G
9G
8G
7G
VTR
AV
CATV
SP
LP
Mh
Di
ON
SU
MO
TU
WE
TH
FR
SA
VPS
OTR
col 2
DP1
REC
X2
1
2
3
4
5
6
7
W
COUNT
REMAIN
Mg
Rc
Se
OFF
col
col 1
DP2
16G
7G
6G
5G
4G
2G
3G
2G
1G
+12V
3.7V (EG)
3.7V (EG)
+12V
QR7559
TIMER OSC
X7501
3.58MHz
SIGNALS
3.9ms
30Vp-p GRID 0
GRID 1
GRID 2
GRID 3
GRID 4
GRID 5
GRID 6
GRID 7
GRID 8
GRID 9
GRID A
GRID B
GRID C
GRID D
GRID E
GRID F
P7506 4
R7595
C7571
(BACK-UP CAPACITOR)
D7501
32KHz
P7506 6
REG. 6V (FROM POWER)
IR RECIEVER C.B.A. (VEP06380E)
IC6701 (µPC1490HA)
+5V
VR6701
IC7503 (MN1280P)
REG 5V
IC7851 (MN158412VYR)
RESET Ⓛ
VDD
SBT
SB0
SB1
RESET Ⓛ
CLK
DATA IN
DATA OUT
RESET Ⓛ
P7803 4
P7803 3
P7803 2
P7801 5
BACK-UP 5V
QR7851
QR7852
SYS.5V
IC7852 (MN1280T)
VDD
RST Ⓛ
QR7801 ~ QR7802
SYS.5V
WHEN VPS SIGNAL DOESN'T COME TO IC7853-13 (ESPECIALLY OUTPUT SIG. AT IC7853-3 IS KEPT TO LOW), THIS IC7851 GENERATES LOW SIG.
IC7853 (SDA5642)
VDD
TAKT-GENERATOR (PLL)
BIPHASE CODE TEST START CODE TEST
SCHIFT REGISTER 40BIT
TRANSMIT REGISTER BANK 5×8BITS
DATA SLICING
PRE-SCALER
SEQUENCE CONTROL
MULTIPLEXER
ADRESS-DEKODER
CBB-GENERATOR AND DECODER FOR LINE 16
AUTOM RESET
SYNCHRON PULSE SEPARATOR
TEST-SIGNAL-GENERATOR
I²C-BUS INTERFACE
ROM DEMODULATOR
P7801 2
C.B.A. (VEP01355C)
SERIAL DATA TRANSMISSION
STANDARD SERIAL CLOCK (IC6001-31)
B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 A B
Approx. 10ms
Approx. 10ms
SERVO SERIAL CLOCK (IC6001-32)
TIMER/DIGITAL SERIAL CLOCK (IC6001-34)
SERIAL DATA (IC6001-14)
NOT USED

CLOCK NO.	DATA TRANSMISSION	CONTENTS OF DATA	CLOCK NO.	DATA TRANSMISSION	CONTENTS OF DATA
B	SYSTEM CONTROL → SERVO	CAP, CYL CONTROL	8	SYSTEM CONTROL → TIMER	COUNTER/TAPE REMAINING CODE
1	SYSTEM CONTROL → TIMER	TAPE REMAINING M/S DISPLAY, DEW	9	SYSTEM CONTROL → TIMER	COUNTER/TAPE REMAINING CODE
2	TIMER → SYSTEM CONTROL	WIRELESS REMOCON TIMER CODE	10	NOT USED	
3	TIMER → SYSTEM CONTROL	OPERATION KEY CODE	11	NOT USED	
4	NOT USED		12	NOT USED	
5	SYSTEM CONTROL → TIMER	PRESENT CONDITION OF VTR	13	NOT USED	
6	SYSTEM CONTROL → TIMER	POWER ON/OFF SLOW SPEED	14	NOT USED	
7	SYSTEM CONTROL → TIMER	COUNTER DISPLAY CODE/ TAPE REMAINING CODE	A	SYSTEM CONTROL → SERVO	SAME AS NO. B

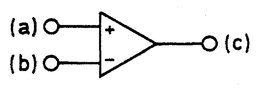
SYMBOL | **Wahrheitstabelle Truth Value Table**

Inverter



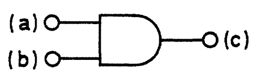
IN	(a)	H	L
OUT	(b)	L	H

Komparator Comparator



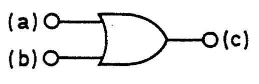
IN	(a) (b)	(a)>(b)	(a)<(b)
OUT	(c)	H	L

UND AND



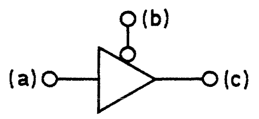
IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	L	L	H

ODER OR



IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	H	H	H

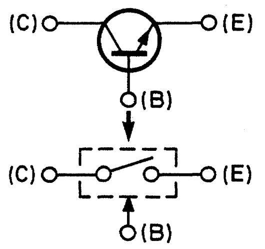
Tri-State-Buffer



IN	(a)	H	L	H or L
	(b)	L	L	H
OUT	(c)	H	L	✱

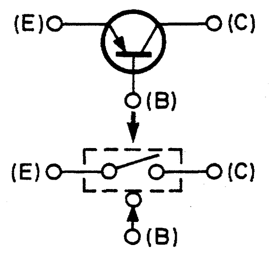
✱ = hochohmig
high impedance

NPN



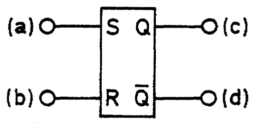
BASE	H	L
TR. SW	ON	OFF

PNP



BASE	H	L
TR. SW	OFF	ON

R-S FLIP-FLOP



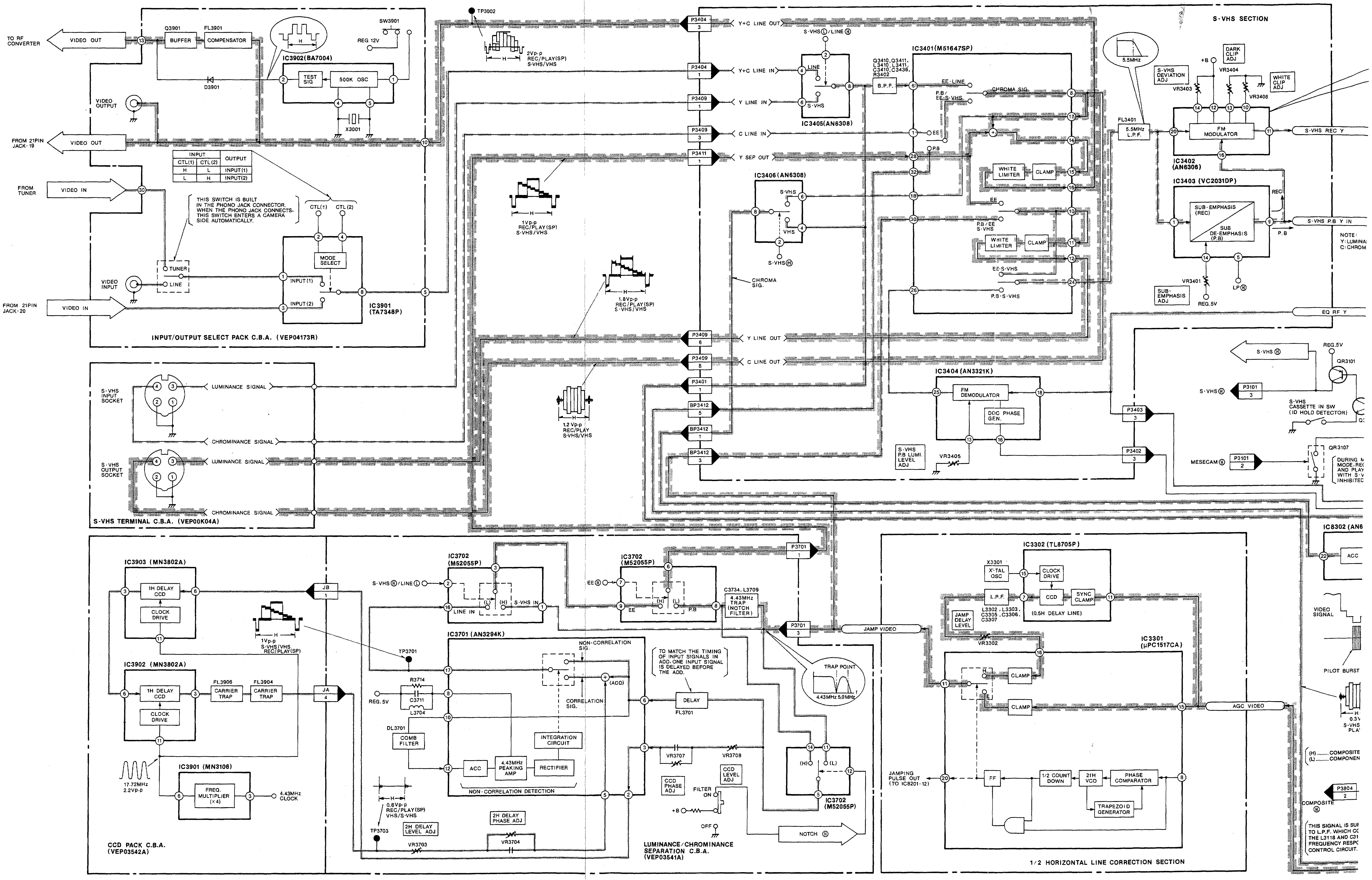
IN	(a)	L	L	⎍
	(b)	L	⎍	L
OUT	(c)		L	H
	(d)		H	L

Blockschaltbild S-VHS-Teil
S-VHS Block Diagram

Signalweg bei Aufnahme (VHS)
Main Signal Path in REC Mode (VHS)

Signalweg bei Aufnahme (S-VHS)
Main Signal Path in REC Mode (S-VHS)

Sigr
Mai

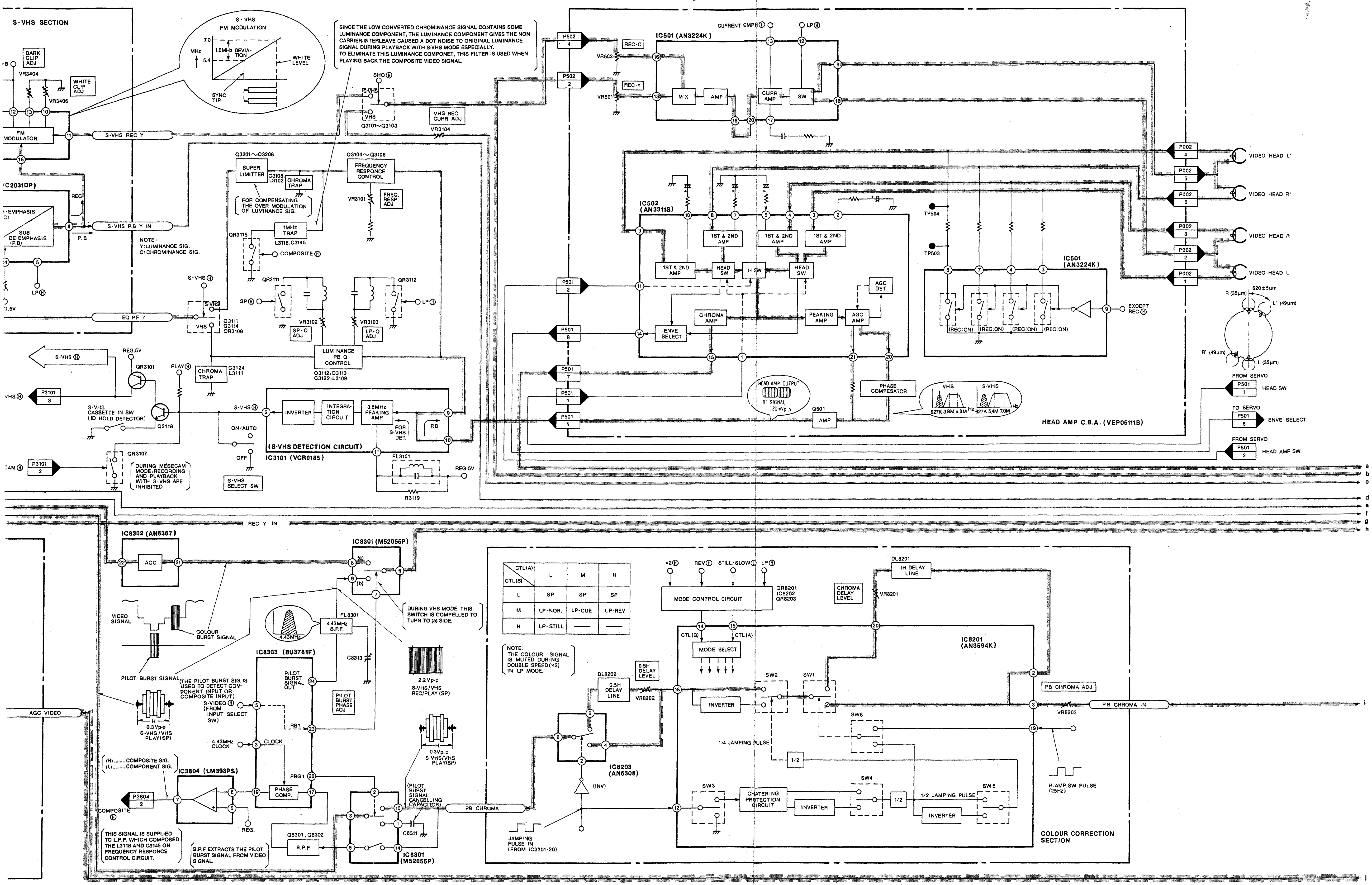


TO RF CONVERTER
VIDEO OUT
Q3901
BUFFER
FL3901
COMPENSATOR
IC3902(BA7004)
TEST SIG
500K OSC
D3901
X3001
SW3901
REG 12V
VIDEO OUTPUT
FROM 21PIN JACK-19
VIDEO OUT
INPUT
CTL(1)
CTL(2)
OUTPUT
H
L
INPUT(1)
INPUT(2)
FROM TUNER
VIDEO IN
THIS SWITCH IS BUILT IN THE PHONO JACK CONNECTOR. WHEN THE PHONO JACK CONNECTS, THIS SWITCH ENTERS A CAMERA SIDE AUTOMATICALLY.
TUNER
LINE
VIDEO INPUT
MODE SELECT
IC3901 (TA7348P)
FROM 21PIN JACK-20
VIDEO IN
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173R)
TP3002
2Vp-p REC/PLAY(SP) S-VHS/VHS
1Vp-p REC/PLAY(SP) S-VHS/VHS
1.8Vp-p REC/PLAY(SP) S-VHS/VHS
1.2 Vp-p REC/PLAY S-VHS/VHS
S-VHS INPUT SOCKET
LUMINANCE SIGNAL
CHROMINANCE SIGNAL
S-VHS OUTPUT SOCKET
S-VHS TERMINAL C.B.A. (VEP00K04A)
P3404
P3409
P3411
P3401
BP3412
Y+C LINE OUT
Y+C LINE IN
Y LINE IN
C LINE IN
Y SEP OUT
Y LINE OUT
C LINE OUT
S-VHS Ⓛ/LINE Ⓗ
IC3405(AN6308)
IC3406(AN6308)
CHROMA SIG.
Q3410,Q3411, L3410,L3411, C3410,C3436, R3402
B.P.F.
IC3401(M51647SP)
EE-LINE
CHROMA SIG.
P.B/EE-S-VHS
EE
P.B
WHITE LIMITER
CLAMP
P.B/EE S-VHS
EE-S-VHS
P.B-S-VHS
S-VHS SECTION
5.5MHz
FL3401
5.5MHz L.P.F.
S-VHS DEVIATION ADJ
DARK CLIP ADJ
WHITE CLIP ADJ
VR3403
VR3404
VR3406
FM MODULATOR
IC3402 (AN6306)
S-VHS REC Y
IC3403 (VC2031DP)
SUB-EMPHASIS (REC)
SUB DE-EMPHASIS (P.B)
REC
S-VHS P.B Y IN
VR3401
SUB-EMPHASIS ADJ
REG.5V
LPⒽ
NOTE: Y:LUMINA C:CHROM
EQ RF Y
IC3404 (AN3321K)
FM DEMODULATOR
DOC PHASE GEN.
S-VHS P.B LUMI. LEVEL ADJ
VR3405
P3403
P3402
S-VHS Ⓗ
REG.5V
QR3101
P3101
S-VHS CASSETTE IN SW (ID HOLD DETECTOR)
MESECAM Ⓗ
QR3107
DURING M MODE-REC AND PLAY WITH S-V INHIBITED
IC8302 (AN6
ACC
IC3903 (MN3802A)
1H DELAY CCD
CLOCK DRIVE
JB
1Vp-p S-VHS/VHS REC/PLAY(SP)
IC3902 (MN3802A)
FL3906
CARRIER TRAP
FL3904
CARRIER TRAP
JA
17.72MHz 2.2Vp-p
IC3901 (MN3106)
FREQ. MULTIPLIER (×4)
4.43MHz CLOCK
CCD PACK C.B.A. (VEP03542A)
IC3702 (M52055P)
S-VHSⒽ/LINEⓁ
LINE IN
S-VHS IN
EEⒽ
EE
P.B
C3734, L3709
4.43MHz TRAP (NOTCH FILTER)
P3701
JAMP VIDEO
TP3701
IC3701 (AN3294K)
R3714
C3711
L3704
REG.5V
DL3701
COMB FILTER
NON-CORRELATION SIG.
(ADD)
CORRELATION SIG.
INTEGRATION CIRCUIT
ACC
4.43MHz PEAKING AMP
RECTIFIER
NON-CORRELATION DETECTION
(TO MATCH THE TIMING OF INPUT SIGNALS IN ADD. ONE INPUT SIGNAL IS DELAYED BEFORE THE ADD.)
DELAY
FL3701
TRAP POINT
4.43MHz 5.0MHz
VR3707
VR3708
CCD PHASE ADJ
CCD LEVEL ADJ
FILTER ON
OFF
+B
IC3702 (M52055P)
NOTCH Ⓗ
0.6Vp-p REC/PLAY(SP) VHS/S-VHS
TP3703
2H DELAY LEVEL ADJ
VR3703
2H DELAY PHASE ADJ
VR3704
LUMINANCE/CHROMINANCE SEPARATION C.B.A. (VEP03541A)
IC3302 (TL8705P)
X3301
X'-TAL OSC
CLOCK DRIVE
L.P.F.
CCD
SYNC CLAMP
JAMP DELAY LEVEL
L3302, L3303, C3305, C3306, C3307
(0.5H DELAY LINE)
VR3302
IC3301 (μPC1517CA)
CLAMP
AGC VIDEO
JAMPING PULSE OUT (TO IC8201-12)
FF
1/2 COUNT DOWN
2fH VCO
PHASE COMPARATOR
TRAPEZOID GENERATOR
1/2 HORIZONTAL LINE CORRECTION SECTION
VIDEO SIGNAL
PILOT BURST
0.3V S-VHS PLA
(H)........COMPOSITE
(L)........COMPONEN
P3804
COMPOSITE Ⓗ
THIS SIGNAL IS SUF TO L.P.F. WHICH CC THE L3118 AND C31 FREQUENCY RESPC CONTROL CIRCUIT.

Blockschaltbild S-VHS-Teil
S-VHS Block Diagram

Signalweg bei Wiedergabe (VHS)
Main Signal Path in Playback Mode (VHS)

Signalweg bei Wiedergabe (S-VHS)
Main Signal Path in Playback Mode (S-VHS)


S·VHS SECTION
S·VHS FM MODULATION
WHITE LEVEL
SYNC TIP
DARK CLIP ADJ
WHITE CLIP ADJ
FM MODULATOR
S·VHS REC Y
S·VHS P.B Y IN
EQ RF Y
SUB DE-EMPHASIS (P.B)
SUPER LIMITTER
CHROMA TRAP
FREQUENCY RESPONCE CONTROL
FREQ. RESP ADJ
1MHz TRAP
SP·Q ADJ
LP·Q ADJ
LUMINANCE PB Q CONTROL
VHS REC CURR ADJ
S·VHS SELECT SW
INVERTER
INTEGRATION CIRCUIT
3.8MHz PEAKING AMP
(S·VHS DETECTION CIRCUIT)
IC3101 (VCR0185)
S-VHS CASSETTE IN SW (ID HOLD DETECTOR)
IC501 (AN3224K)
MIX
AMP
CURR AMP
SW
REC·C
REC·Y
IC502 (AN3311S)
1ST & 2ND AMP
HEAD SW
H SW
AGC DET
CHROMA AMP
PEAKING AMP
AGC AMP
ENVE SELECT
PHASE COMPESATOR
HEAD AMP OUTPUT
RF SIGNAL 120mVp-p
VIDEO HEAD L'
VIDEO HEAD R'
VIDEO HEAD R
VIDEO HEAD L
HEAD SW
ENVE SELECT
HEAD AMP SW
HEAD AMP C.B.A. (VEP05111B)
REC Y IN
IC8302 (AN6367)
ACC
IC8301 (M52055P)
VIDEO SIGNAL
COLOUR BURST SIGNAL
PILOT BURST SIGNAL
4.43MHz B.P.F.
IC8303 (BU3781F)
PILOT BURST SIGNAL OUT
PILOT BURST PHASE ADJ
PHASE COMP.
IC3804 (LM393PS)
B.P.F
PB CHROMA
AGC VIDEO
MODE CONTROL CIRCUIT
CHROMA DELAY LEVEL
1H DELAY LINE
MODE SELECT
0.5H DELAY LINE
0.5H DELAY LEVEL
IC8203 (AN6308)
IC8201 (AN3594K)
PB CHROMA ADJ
P.B CHROMA IN
INVERTER
CHATERING PROTECTION CIRCUIT
1/4 JAMPING PULSE
1/2 JAMPING PULSE
H.AMP.SW PULSE (25Hz)
JAMPING PULSE IN (FROM IC3301-20)
COLOUR CORRECTION SECTION

SINCE THE LOW CONVERTED CHROMINANCE SIGNAL CONTAINS SOME LUMINANCE COMPONENT, THE LUMINANCE COMPONENT GIVES THE NON CARRIER-INTERLEAVE CAUSED A DOT NOISE TO ORIGINAL LUMINANCE SIGNAL DURING PLAYBACK WITH S-VHS MODE ESPECIALLY.
TO ELIMINATE THIS LUMINANCE COMPONET, THIS FILTER IS USED WHEN PLAYING BACK THE COMPOSITE VIDEO SIGNAL.

FOR COMPENSATING THE OVER MODULATION OF LUMINANCE SIG.

NOTE:
Y: LUMINANCE SIG.
C: CHROMINANCE SIG.

DURING MESECAM MODE·RECORDING AND PLAYBACK WITH S-VHS ARE INHIBITED

(THE PILOT BURST SIG. IS USED TO DETECT COMPONENT INPUT OR COMPOSITE INPUT)

DURING VHS MODE, THIS SWITCH IS COMPELLED TO TURN TO (a) SIDE.

(H) .... COMPOSITE SIG.
(L) .... COMPONENT SIG.

THIS SIGNAL IS SUPPLIED TO L.P.F. WHICH COMPOSED THE L3118 AND C3145 ON FREQUENCY RESPONCE CONTROL CIRCUIT.

B.P.F EXTRACTS THE PILOT BURST SIGNAL FROM VIDEO SIGNAL.

NOTE:
THE COLOUR SIGNAL IS MUTED DURING DOUBLE SPEED (×2) IN LP MODE.

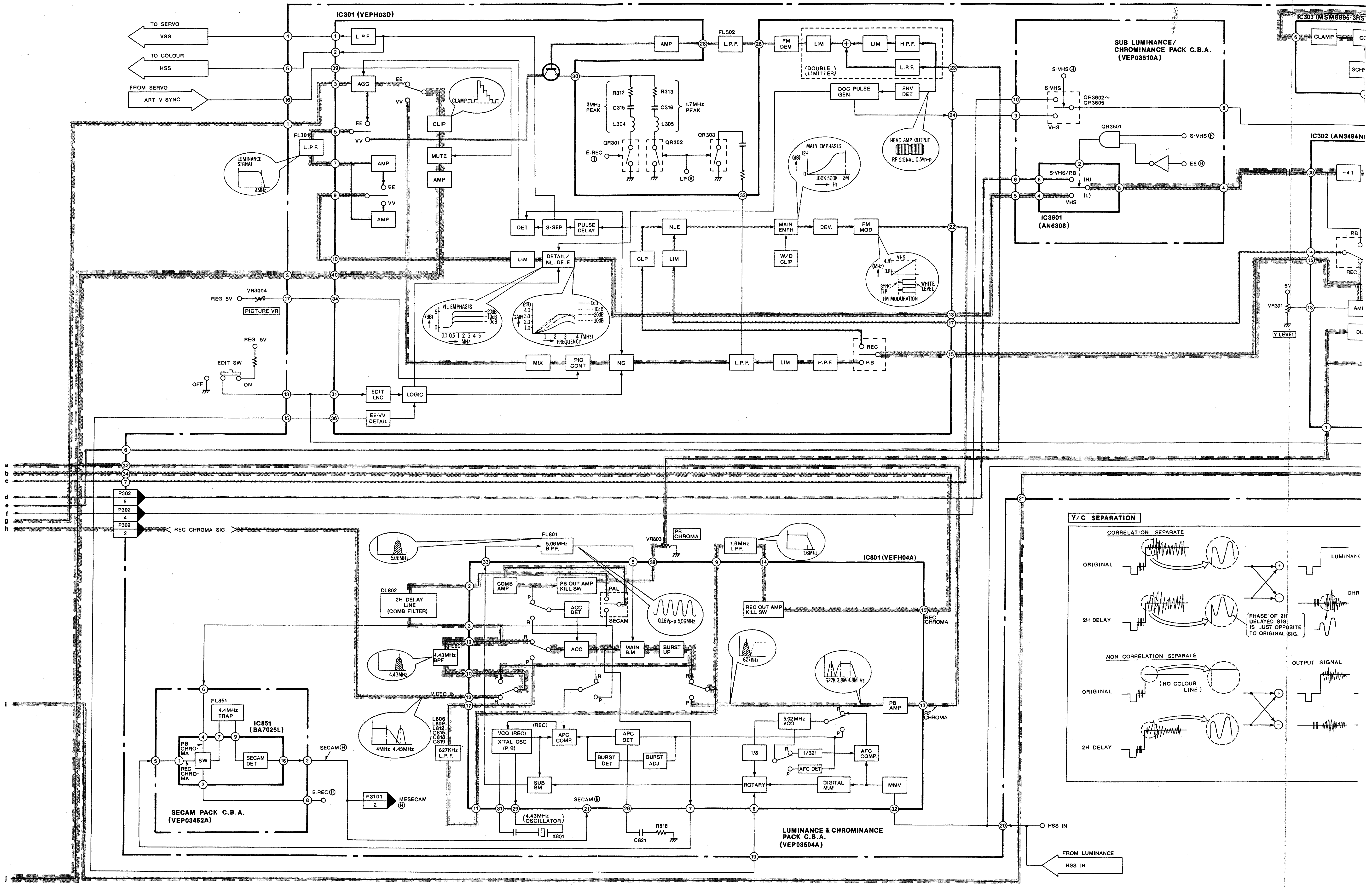
CTL(B) \ CTL(A)	L	M	H
L	SP	SP	SP
M	LP·NOR.	LP·CUE	LP·REV
H	LP·STILL	——	——

Blockschaltbild Luminanz- und Farbteil
Block Diagram Luminance and Chroma Section

Bloc
Bloc

Signalweg bei Aufnahme (VHS)/Main Signal Path in REC Mode (VHS)
Signalweg bei Aufnahme (S-VHS)/Main Signal Path in REC Mode (S-VHS)

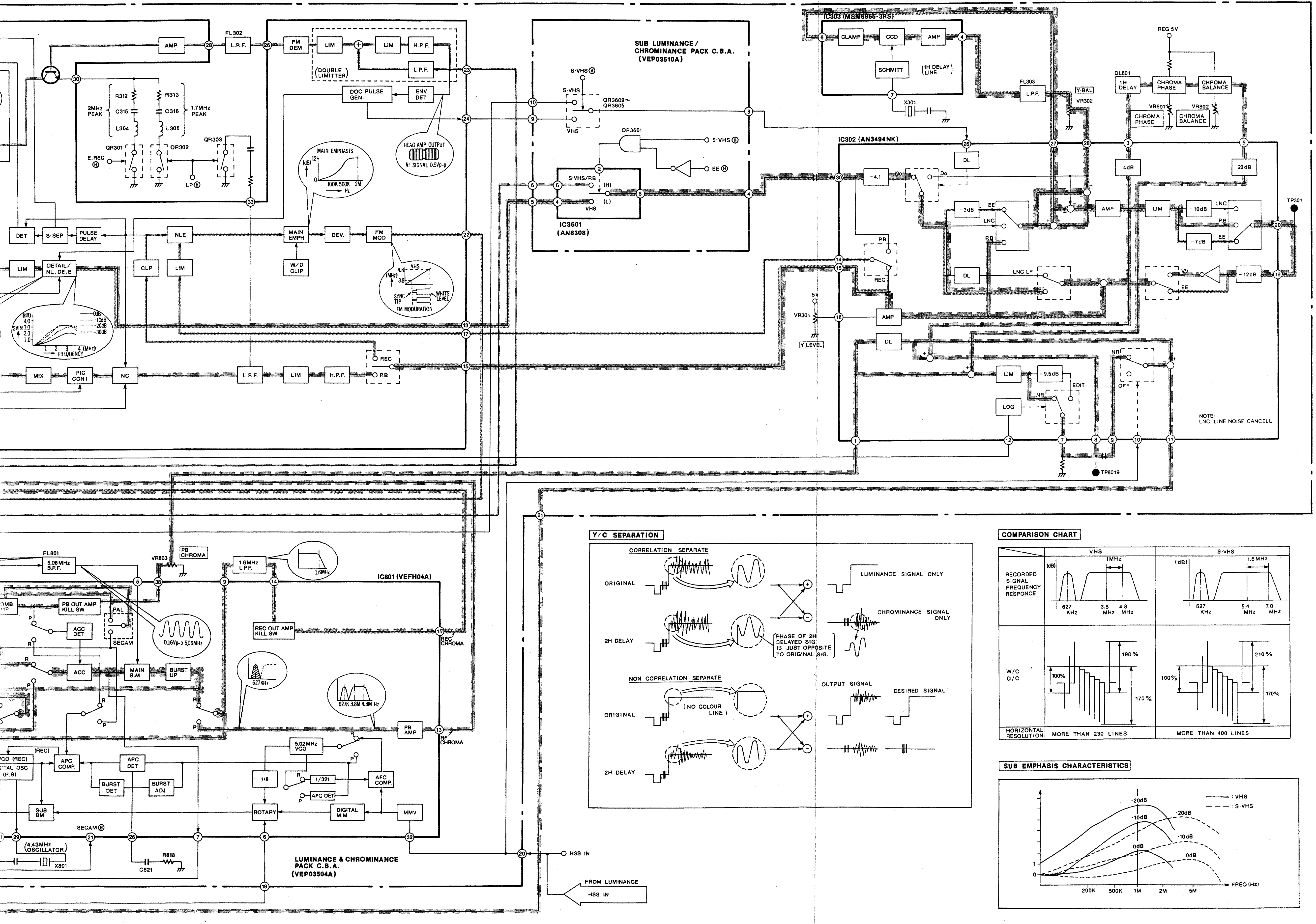
Signalweg bei Wiedergabe (VHS)/Mai
Signalweg bei Wiedergabe (S-VHS)/M



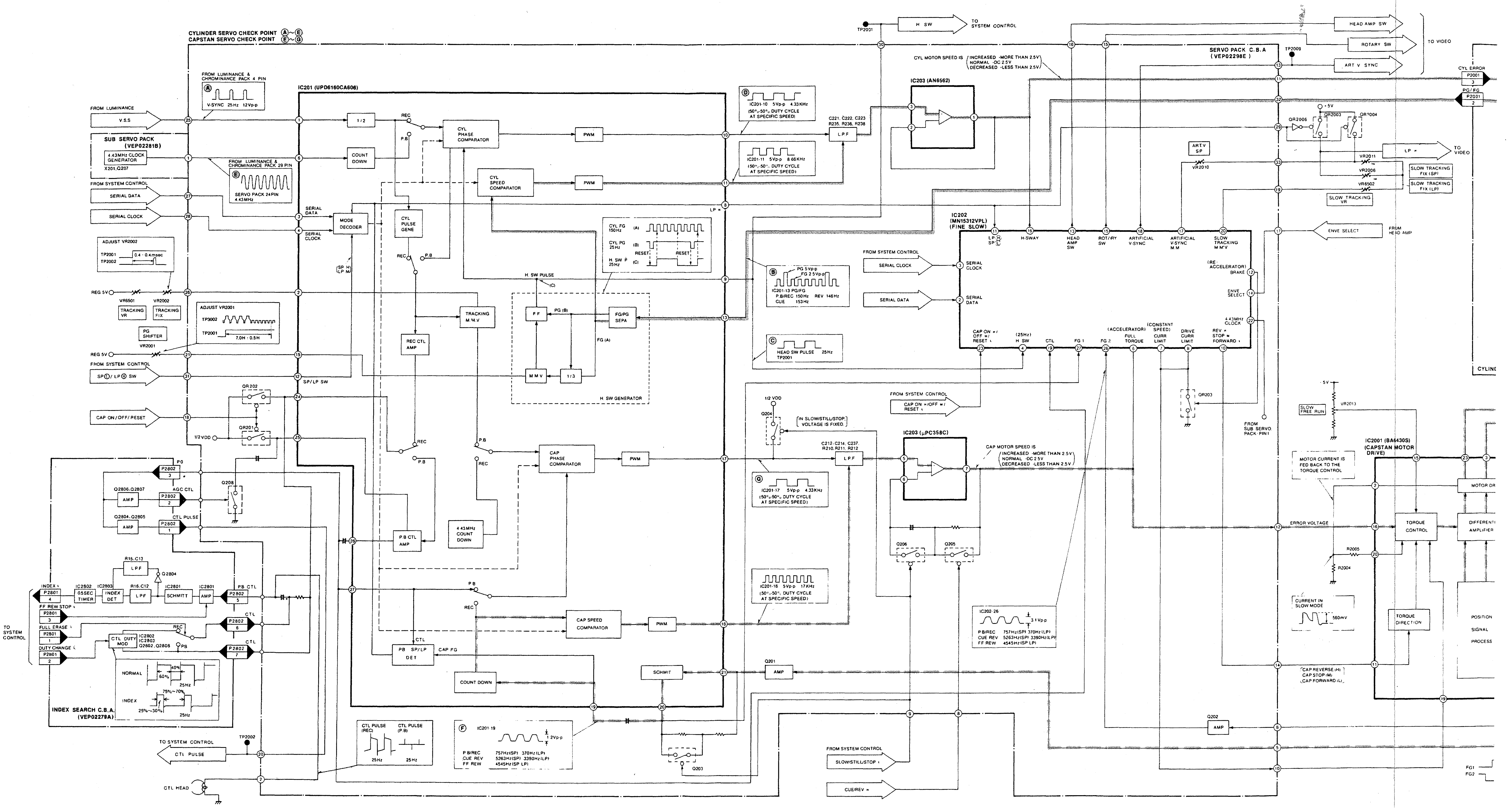
IC301 (VEPH03D)
TO SERVO
VSS
TO COLOUR
HSS
FROM SERVO
ART V SYNC
L.P.F.
AGC
EE
VV
CLAMP
CLIP
MUTE
AMP
FL301
LUMINANCE SIGNAL
4MHz
DET
S-SEP
PULSE DELAY
LIM
DETAIL/ NL. DE. E
NL EMPHASIS
FREQUENCY
REG 5V
VR3004
PICTURE VR
EDIT SW
OFF
ON
EDIT LNC
LOGIC
EE-VV DETAIL
MIX
PIC CONT
NC
FL302
FM DEM
LIM
H.P.F.
(DOUBLE LIMITTER)
DOC PULSE GEN.
ENV DET
R312
R313
C315
C316
L304
L305
2MHz PEAK
1.7MHz PEAK
QR301
QR302
QR303
E.REC
LP
MAIN EMPHASIS
HEAD AMP OUTPUT
RF SIGNAL 0.5Vp-p
NLE
CLP
MAIN EMPH
W/D CLIP
DEV.
FM MOD
SYNC TIP
WHITE LEVEL
FM MODURATION
REC
P.B
SUB LUMINANCE/ CHROMINANCE PACK C.B.A. (VEP03510A)
S-VHS
QR3602~ QR3605
QR3601
S-VHS/PB
IC3601 (AN6308)
IC303 (MSM6965-3RS
CLAMP
IC302 (AN3494N
VR301
Y LEVEL
P302
REC CHROMA SIG.
FL801
5.06MHz B.P.F.
VR803
PB CHROMA
1.6MHz L.P.F.
IC801 (VEFH04A)
DL802
2H DELAY LINE (COMB FILTER)
COMB AMP
PB OUT AMP KILL SW
ACC DET
PAL
SECAM
0.16Vp-p 5.06MHz
REC OUT AMP KILL SW
REC CHROMA
4.43MHz BPF
ACC
MAIN B.M
BURST UP
627KHz
627K 3.8M 4.8M Hz
VIDEO IN
4MHz 4.43MHz
627KHz L.P.F.
VCO (REC)
X'TAL OSC (P.B)
APC COMP.
APC DET
BURST DET
BURST ADJ
SUB BM
5.02MHz VCO
1/8
1/321
AFC DET
AFC COMP.
ROTARY
DIGITAL M.M
MMV
PB AMP
RF CHROMA
(4.43MHz OSCILLATOR)
X801
C821
R818
SECAM
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504A)
FL851
4.4MHz TRAP
IC851 (BA7025L)
P.B CHROMA
REC CHROMA
SW
SECAM DET
E.REC
P3101
MESECAM
SECAM PACK C.B.A. (VEP03452A)
HSS IN
FROM LUMINANCE
Y/C SEPARATION
CORRELATION SEPARATE
ORIGINAL
2H DELAY
PHASE OF 2H DELAYED SIG. IS JUST OPPOSITE TO ORIGINAL SIG.
NON CORRELATION SEPARATE
(NO COLOUR LINE)
OUTPUT SIGNAL
LUMINANC
CHR
a
b
c
d
e
f
g
h
i
j

Blockschaltbild Luminanz- und Farbteil
Block Diagram Luminance and Chroma Section

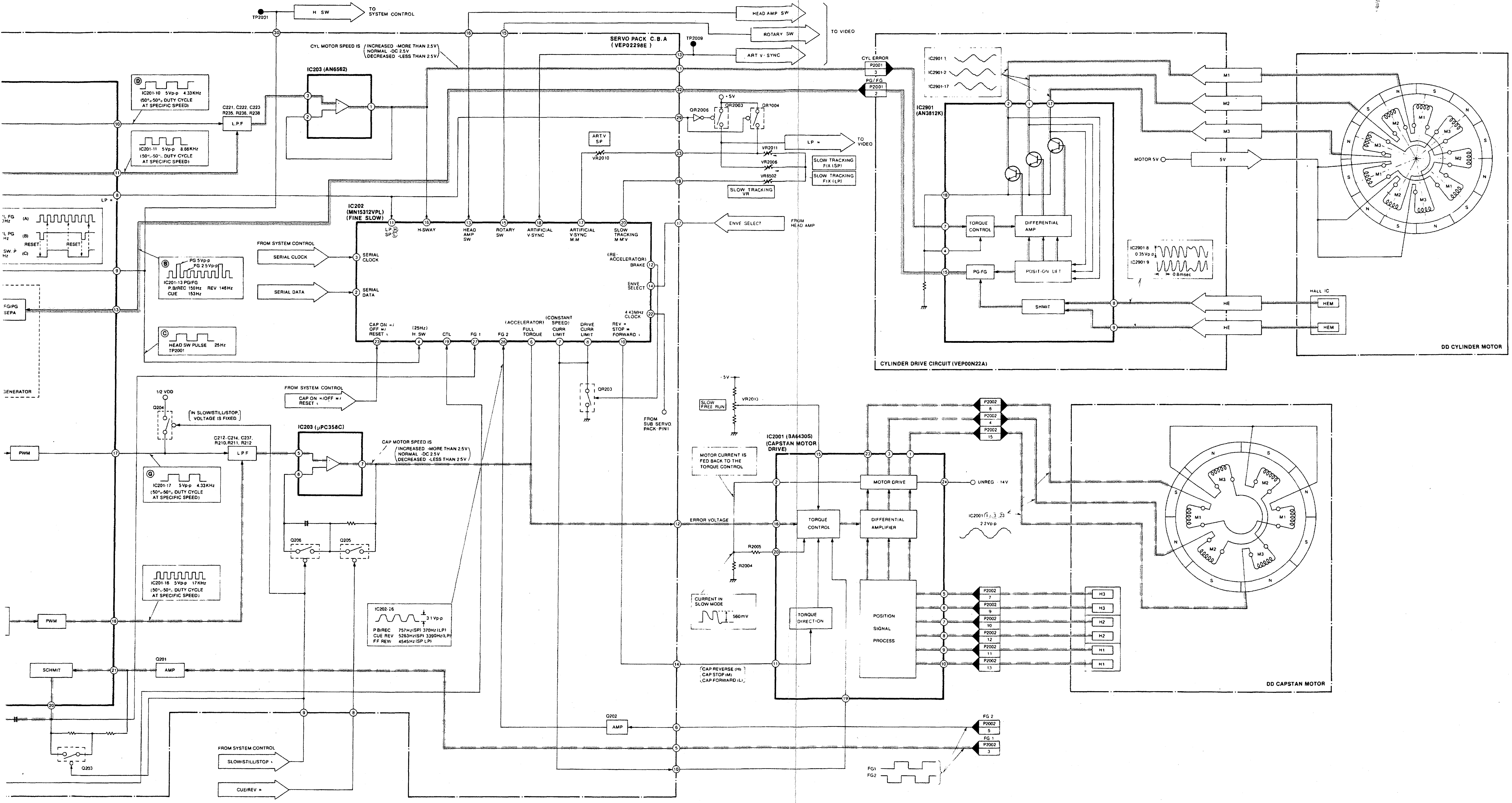
Signalweg bei Aufnahme (VHS)/Main Signal Path in REC Mode (VHS)
Signalweg bei Aufnahme (S-VHS)/Main Signal Path in REC Mode (S-VHS)
Signalweg bei Wiedergabe (VHS)/Main Signal Path in Playback Mode (VHS)
Signalweg bei Wiedergabe (S-VHS)/Main Signal Path in Playback Mode (S-VHS)


AMP
FL302
L.P.F.
FM DEM
LIM
H.P.F.
L.P.F.
(DOUBLE LIMITTER)
DOC PULSE GEN.
ENV DET
R312
R313
2MHz PEAK
C315
C316
1.7MHz PEAK
L304
L305
QR301
QR302
QR303
E.REC Ⓗ
LP Ⓗ
MAIN EMPHASIS
HEAD AMP OUTPUT
RF SIGNAL 0.5Vp-p
100K 500K 2M Hz
SUB LUMINANCE/ CHROMINANCE PACK C.B.A. (VEP03510A)
S-VHS Ⓗ
S-VHS
VHS
QR3602~QR3605
QR3601
S-VHS Ⓗ
EE Ⓗ
S-VHS/P.B
(H)
(L)
IC3601 (AN6308)
DET
S-SEP
PULSE DELAY
NLE
MAIN EMPH
DEV.
FM MOD
LIM
DETAIL/ NL. DE. E
CLP
LIM
W/D CLIP
SYNC TIP
WHITE LEVEL
FM MODURATION
GAIN
FREQUENCY
MIX
PIC CONT
NC
L.P.F.
LIM
H.P.F.
REC
P.B
IC303 (MSM6965-3RS)
CLAMP
CCD
AMP
SCHMITT
(1H DELAY LINE)
X301
FL303
L.P.F.
Y-BAL
VR302
REG 5V
DL801
1H DELAY
CHROMA PHASE
CHROMA BALANCE
VR801
VR802
IC302 (AN3494NK)
DL
-4.1
4dB
22dB
-3dB
EE
LNC
P.B
AMP
LIM
-10dB
-7dB
TP301
REC
DL
LNC LP
VV
-12dB
5V
VR301
Y LEVEL
AMP
DL
NR
OFF
LIM
-9.5dB
EDIT
LOG
NOTE: LNC LINE NOISE CANCELL
TP8019
FL801
5.06MHz B.P.F.
VR803
PB CHROMA
1.6MHz L.P.F.
1.6MHz
IC801 (VEFH04A)
PB OUT AMP KILL SW
PAL
ACC DET
SECAM
0.16Vp-p 5.06MHz
REC OUT AMP KILL SW
REC CHROMA
ACC
MAIN B.M
BURST UP
627KHz
627K 3.8M 4.8M Hz
PB AMP
RF CHROMA
VCO (REC)
XTAL OSC (P.B)
APC COMP.
APC DET
BURST DET
BURST ADJ
5.02MHz VCO
1/8
1/321
AFC DET
AFC COMP.
SUB BM
ROTARY
DIGITAL M.M
MMV
SECAM Ⓗ
(4.43MHz OSCILLATOR)
X801
R818
C821
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504A)
HSS IN
FROM LUMINANCE HSS IN
Y/C SEPARATION
CORRELATION SEPARATE
ORIGINAL
2H DELAY
LUMINANCE SIGNAL ONLY
CHROMINANCE SIGNAL ONLY
PHASE OF 2H DELAYED SIG. IS JUST OPPOSITE TO ORIGINAL SIG.
NON CORRELATION SEPARATE
(NO COLOUR LINE)
OUTPUT SIGNAL
DESIRED SIGNAL
COMPARISON CHART
VHS
S-VHS
RECORDED SIGNAL FREQUENCY RESPONCE
1MHz
1.6MHz
627 KHz
3.8 MHz
4.8 MHz
5.4 MHz
7.0 MHz
W/C
D/C
100%
190%
170%
210%
HORIZONTAL RESOLUTION
MORE THAN 230 LINES
MORE THAN 400 LINES
SUB EMPHASIS CHARACTERISTICS
: VHS
: S-VHS
-20dB
-10dB
0dB
FREQ (Hz)
200K
500K
1M
2M
5M

Blockschaltbild Servoteil
Servo Block Diagram


CYLINDER SERVO CHECK POINT Ⓐ~Ⓔ
CAPSTAN SERVO CHECK POINT Ⓕ~Ⓖ
FROM LUMINANCE
V.S.S
SUB SERVO PACK (VEP02281B)
4.43MHz CLOCK GENERATOR
X201, Q207
FROM SYSTEM CONTROL
SERIAL DATA
SERIAL CLOCK
ADJUST VR2002
TP2001
TP2002
0.4~0.4msec
REG 5V
VR6501
VR2002
TRACKING VR
TRACKING FIX
PG SHIFTER
VR2001
ADJUST VR2001
TP3002
7.0H~0.5H
SP Ⓗ / LP Ⓛ SW
CAP ON/OFF/RESET
1/2 VDD
QR202
QR201
FROM LUMINANCE & CHROMINANCE PACK 4 PIN
V-SYNC 25Hz 12Vp-p
FROM LUMINANCE & CHROMINANCE PACK 29 PIN
SERVO PACK 24PIN 4.43MHz
IC201 (UPD6160CA606)
1/2
COUNT DOWN
REC
P.B
CYL PHASE COMPARATOR
CYL SPEED COMPARATOR
PWM
SERIAL DATA
SERIAL CLOCK
MODE DECODER
CYL PULSE GENE
(SP H) (LP M)
CYL FG 150Hz
CYL PG 25Hz
H. SW P 25Hz
RESET
H. SW PULSE
F F
PG (B)
FG/PG SEPA
FG (A)
MMV
1/3
H. SW GENERATOR
TRACKING M.M.V
REC CTL AMP
SP/LP SW
CAP PHASE COMPARATOR
4.43MHz COUNT DOWN
P.B CTL AMP
CAP SPEED COMPARATOR
PB SP/LP DET
CAP FG
CTL
COUNT DOWN
SCHMIT
Q201
AMP
Q203
P2802
P0
Q2806, Q2807
AMP
AGC CTL
Q208
Q2804, Q2805
CTL PULSE
R15, C13
LPF
Q2804
INDEX
IC2802 0.5SEC TIMER
IC2803 INDEX DET
R16, C12 LPF
IC2801 SCHMITT
IC2801 AMP
PB CTL
P2801
FF REW STOP
FULL ERASE
DUTY CHANGE
CTL DUTY MOD
IC2802 IC2803 Q2602, Q2805
TO SYSTEM CONTROL
NORMAL
60%
40%
25Hz
INDEX
75%~70%
25%~30%
INDEX SEARCH C.B.A. (VEP02278A)
TO SYSTEM CONTROL
CTL PULSE
TP2002
CTL HEAD
CTL PULSE (REC)
CTL PULSE (P.B)
25Hz
IC201-19
1.2Vp-p
P.B/REC 757Hz(SP) 370Hz(LP)
CUE REV 5263Hz(SP) 3390Hz(LP)
FF REW 4545Hz(SP LP)
Ⓓ IC201-10 5Vp-p 4.33KHz (50%~50% DUTY CYCLE AT SPECIFIC SPEED)
IC201-11 5Vp-p 8.66KHz (50%~50% DUTY CYCLE AT SPECIFIC SPEED)
Ⓑ PG 5Vp-p FG 2.5Vp-p
IC201-13 PG/FG P.B/REC 150Hz REV 146Hz CUE 153Hz
Ⓒ HEAD SW PULSE 25Hz TP2001
Ⓖ IC201-17 5Vp-p 4.33KHz (50%~50% DUTY CYCLE AT SPECIFIC SPEED)
IC201-18 5Vp-p 17KHz (50%~50% DUTY CYCLE AT SPECIFIC SPEED)
1/2 VDD
Q204
IN SLOW/STILL/STOP VOLTAGE IS FIXED
C212~C214, C237 R210, R211, R212
LPF
C221, C222, C223 R235, R236, R238
TP2001
H SW
TO SYSTEM CONTROL
CYL MOTOR SPEED IS (INCREASED -MORE THAN 2.5V) (NORMAL -DC 2.5V) (DECREASED -LESS THAN 2.5V)
IC203 (AN6562)
SERVO PACK C.B.A (VEP02298E)
TP2009
HEAD AMP SW
ROTARY SW
ART V SYNC
TO VIDEO
CYL ERROR
P2001
PG/FG
+5V
QR2006
QR2003
QR2004
VR2011
LP H
TO VIDEO
VR2006
SLOW TRACKING FIX (SP)
VR6502
SLOW TRACKING FIX (LP)
SLOW TRACKING VR
ART V SP
VR2010
IC202 (MN15312VPL) (FINE SLOW)
LP Ⓗ SP Ⓛ
H-SWAY
HEAD AMP SW
ROTARY SW
ARTIFICIAL V-SYNC
ARTIFICIAL V-SYNC M.M
SLOW TRACKING M.M.V
ENVE SELECT
FROM HEAD AMP
FROM SYSTEM CONTROL
SERIAL CLOCK
SERIAL DATA
(RE-ACCELERATOR) BRAKE
ENVE SELECT
4.43MHz CLOCK
CAP ON H / OFF M / RESET L
(25Hz) H SW
CTL
FG 1
FG 2
(ACCELERATOR) FULL TORQUE
(CONSTANT SPEED) CURR LIMIT
DRIVE CURR LIMIT
REV H STOP M FORWARD L
CAP ON H / OFF M / RESET L
QR203
FROM SUB SERVO PACK PIN 1
IC203 (μPC358C)
CAP MOTOR SPEED IS (INCREASED -MORE THAN 2.5V) (NORMAL -DC 2.5V) (DECREASED -LESS THAN 2.5V)
Q206
Q205
IC202-26
3.1Vp-p
P.B/REC 757Hz(SP) 370Hz(LP)
CUE REV 5263Hz(SP) 3390Hz(LP)
FF REW 4545Hz(SP LP)
FROM SYSTEM CONTROL
SLOW/STILL/STOP L
CUE/REV H
Q202
AMP
5V
VR2013
SLOW FREE RUN
MOTOR CURRENT IS FED BACK TO THE TORQUE CONTROL
IC2001 (BA6430S) (CAPSTAN MOTOR DRIVE)
ERROR VOLTAGE
R2005
R2004
CURRENT IN SLOW MODE
560mV
TORQUE CONTROL
TORQUE DIRECTION
CAP REVERSE (H) CAP STOP (M) CAP FORWARD (L)
MOTOR DR
DIFFERENTI AMPLIFIER
POSITION SIGNAL PROCESS
CYLINI
FG1
FG2

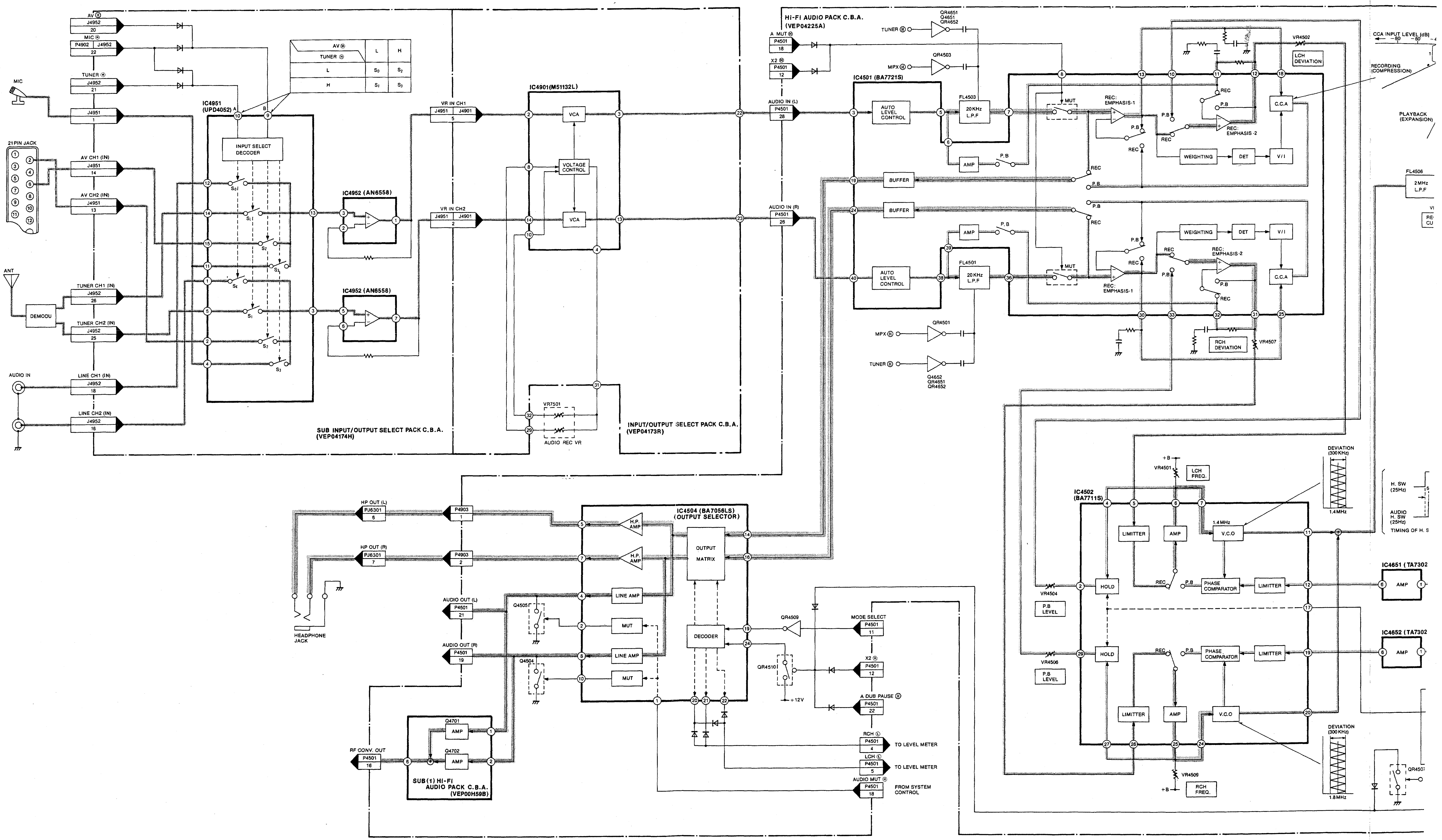
Blockschaltbild Servoteil
Servo Block Diagram


TP2001
H SW
TO SYSTEM CONTROL
HEAD AMP SW
ROTARY SW
ART V-SYNC
TO VIDEO
SERVO PACK C.B.A (VEP02298E)
TP2009
CYL MOTOR SPEED IS (INCREASED -MORE THAN 2.5V / NORMAL -DC 2.5V / DECREASED -LESS THAN 2.5V)
IC203 (AN6562)
IC201-10 5Vp-p 4.33KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
C221, C222, C223 R235, R236, R238
L.P.F
IC201-11 5Vp-p 8.66KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
QR2006
QR2003
QR2004
ART V SP
VR2010
LP =
TO VIDEO
VR2011
VR2006
VR6502
SLOW TRACKING FIX (SP)
SLOW TRACKING FIX (LP)
SLOW TRACKING VR
ENVE SELECT
FROM HEAD AMP
IC202 (MN15312VPL) (FINE SLOW)
LP/SP
H-SWAY
HEAD AMP SW
ROTARY SW
ARTIFICIAL V-SYNC
ARTIFICIAL V-SYNC M.M
SLOW TRACKING M.M.V
FROM SYSTEM CONTROL
SERIAL CLOCK
SERIAL DATA
(RE-ACCELERATOR) BRAKE
ENVE SELECT
4.43MHz CLOCK
IC201-13 PG/FG P.B/REC 150Hz REV 146Hz CUE 153Hz
HEAD SW PULSE 25Hz TP2001
CAP ON =/ OFF =/ RESET
(25Hz) H SW
CTL
FG 1
FG 2
(ACCELERATOR) FULL TORQUE
(CONSTANT SPEED) CURR LIMIT
DRIVE CURR LIMIT
REV = STOP = FORWARD
CAP ON =/OFF =/ RESET
QR203
FROM SUB SERVO PACK-PIN1
1/2 VDD
Q204
(IN SLOW/STILL/STOP, VOLTAGE IS FIXED)
C212, C214, C237, R210, R211, R212
IC203 (µPC358C)
CAP MOTOR SPEED IS (INCREASED -MORE THAN 2.5V / NORMAL -DC 2.5V / DECREASED -LESS THAN 2.5V)
PWM
IC201-17 5Vp-p 4.33KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
Q206
Q205
IC201-18 5Vp-p 17KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
IC202-26 3.1Vp-p P.B/REC 757Hz(SP) 370Hz(LP) CUE REV 5263Hz(SP) 3390Hz(LP) FF REW 4545Hz(SP LP)
SCHMIT
Q201 AMP
Q202 AMP
Q203
FROM SYSTEM CONTROL
SLOW/STILL/STOP
CUE/REV =
GENERATOR
FG/PG SEPA
CYL ERROR P2001 3
PG/FG P2001 2
IC2901-1
IC2901-2
IC2901-17
IC2901 (AN3812K)
TORQUE CONTROL
DIFFERENTIAL AMP
PG-FG
POSITION DET
SHMIT
IC2901-8 0.35Vp-p
IC2901-9
0.8msec
M1
M2
M3
MOTOR 5V
5V
HE
HALL IC
HEM
CYLINDER DRIVE CIRCUIT (VEP00N22A)
DD CYLINDER MOTOR
5V
VR2013
SLOW FREE RUN
MOTOR CURRENT IS FED BACK TO THE TORQUE CONTROL
IC2001 (BA6430S) (CAPSTAN MOTOR DRIVE)
ERROR VOLTAGE
MOTOR DRIVE
UNREG 14V
TORQUE CONTROL
DIFFERENTIAL AMPLIFIER
IC2001 2.2Vp-p
R2005
R2004
CURRENT IN SLOW MODE
560mV
TORQUE DIRECTION
POSITION SIGNAL PROCESS
CAP REVERSE (H) CAP STOP (M) CAP FORWARD (L)
P2002
H3
H2
H1
FG 2
FG 1
FG1
FG2
DD CAPSTAN MOTOR

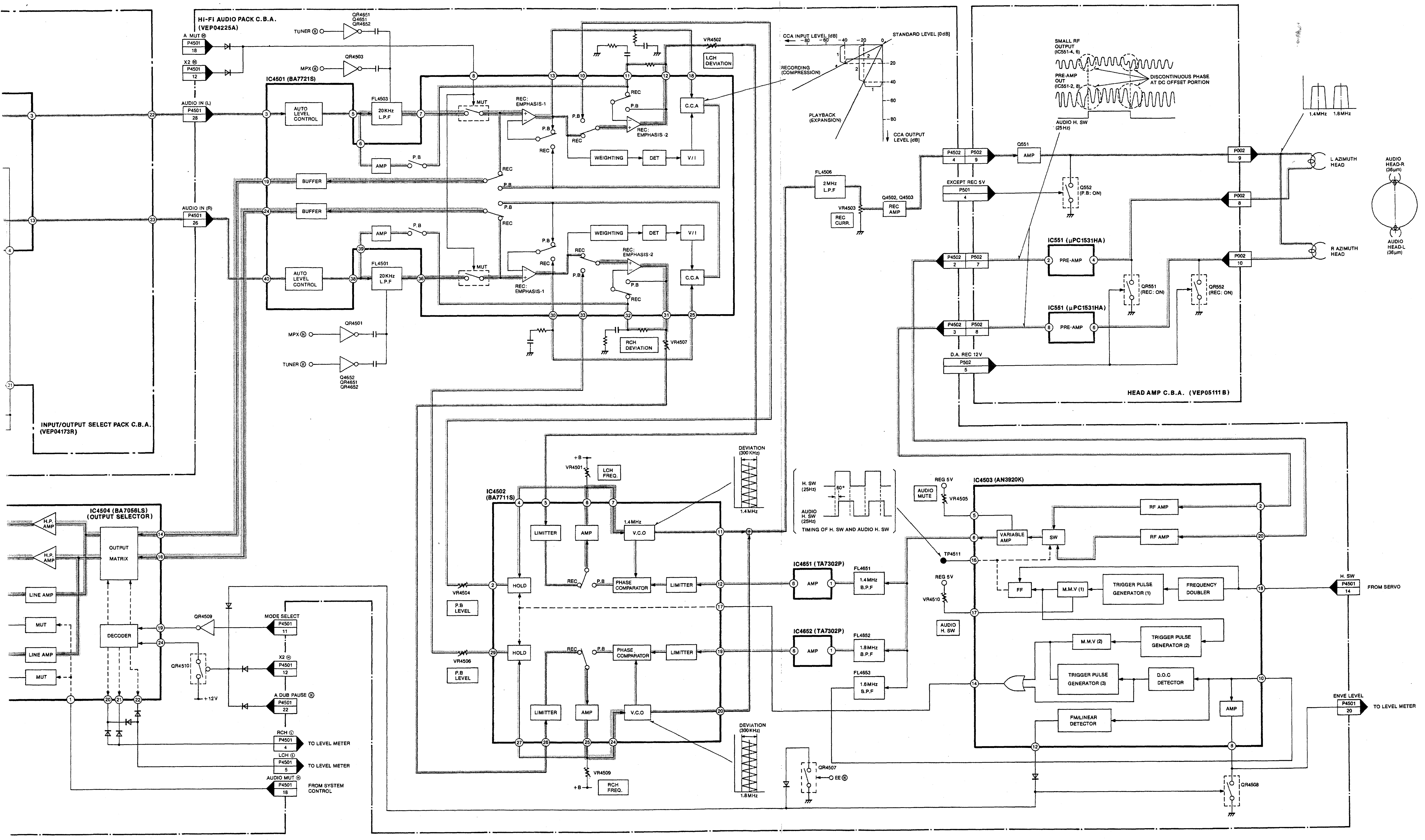
Kopftrommel-Geschwindigkeitsregelung — Cylinder Servo Speed Loop
Capstan-Geschwindigkeitsregelung — Capstan Servo Speed Loop
Kopftrommel-Phasenregelung — Cylinder Servo Phase Loop
Capstan-Phasenregelung — Capstan Servo Phase Loop

Blockschaltbild FM-Tonteil
FM Audio Block Diagram

Bloc
FM


AV Ⓡ
J4952
20
MIC Ⓡ
P4902
J4952
22
TUNER Ⓡ
J4952
21
MIC
J4951
1
21PIN JACK
AV CH1 (IN)
J4951
14
AV CH2 (IN)
J4951
13
ANT
DEMODU
TUNER CH1 (IN)
J4952
26
TUNER CH2 (IN)
J4952
25
AUDIO IN
LINE CH1 (IN)
J4952
18
LINE CH2 (IN)
J4952
16
IC4951
(UPD4052)
A
B
INPUT SELECT DECODER
S0
S1
S2
S3
AV Ⓡ
TUNER Ⓡ
L
H
S0
S2
S1
S3
IC4952 (AN6558)
IC4952 (AN6558)
VR IN CH1
J4951
J4901
5
VR IN CH2
J4951
J4901
2
IC4901(M51132L)
VCA
VOLTAGE CONTROL
VCA
VR7501
AUDIO REC VR
SUB INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04174H)
INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04173R)
HI-FI AUDIO PACK C.B.A.
(VEP04225A)
A MUT Ⓗ
P4501
18
X2 Ⓗ
P4501
12
AUDIO IN (L)
P4501
28
AUDIO IN (R)
P4501
26
TUNER Ⓡ
QR4651
Q4651
QR4652
MPX Ⓗ
QR4503
IC4501 (BA7721S)
AUTO LEVEL CONTROL
FL4503
20KHz L.P.F
AMP
P.B
MUT
REC
REC: EMPHASIS-1
REC: EMPHASIS-2
P.B
VR4502
LCH DEVIATION
C.C.A
WEIGHTING
DET
V/I
BUFFER
BUFFER
AMP
FL4501
20KHz L.P.F
AUTO LEVEL CONTROL
RCH DEVIATION
VR4507
QR4501
MPX Ⓗ
TUNER Ⓡ
Q4652
QR4651
QR4652
CCA INPUT LEVEL (dB)
-80
-60
RECORDING (COMPRESSION)
PLAYBACK (EXPANSION)
FL4506
2MHz L.P.F
HP OUT (L)
PJ6301
6
P4903
1
HP OUT (R)
PJ6301
7
P4903
2
HEADPHONE JACK
IC4504 (BA7056LS)
(OUTPUT SELECTOR)
H.P. AMP
H.P. AMP
OUTPUT MATRIX
LINE AMP
MUT
LINE AMP
MUT
DECODER
AUDIO OUT (L)
P4501
21
AUDIO OUT (R)
P4501
19
Q4505
Q4504
QR4509
QR4510
+12V
MODE SELECT
P4501
11
X2 Ⓗ
P4501
12
A DUB PAUSE Ⓗ
P4501
22
RCH Ⓛ
P4501
4
TO LEVEL METER
LCH Ⓛ
P4501
5
TO LEVEL METER
AUDIO MUT Ⓗ
P4501
18
FROM SYSTEM CONTROL
Q4701
AMP
Q4702
AMP
RF CONV. OUT
P4501
16
SUB(1) HI-FI AUDIO PACK C.B.A.
(VEP00H59B)
IC4502
(BA7711S)
+B
VR4501
LCH FREQ.
LIMITTER
AMP
1.4MHz
V.C.O
DEVIATION (300KHz)
1.4MHz
HOLD
REC
P.B
PHASE COMPARATOR
LIMITTER
VR4504
P.B LEVEL
VR4506
P.B LEVEL
HOLD
PHASE COMPARATOR
LIMITTER
LIMITTER
AMP
V.C.O
VR4509
RCH FREQ.
DEVIATION (300KHz)
1.8MHz
H. SW (25Hz)
AUDIO H. SW (25Hz)
TIMING OF H. S
IC4651 (TA7302
AMP
IC4652 (TA7302
AMP
QR4507

Blockschaltbild FM-Tonteil
FM Audio Block Diagram

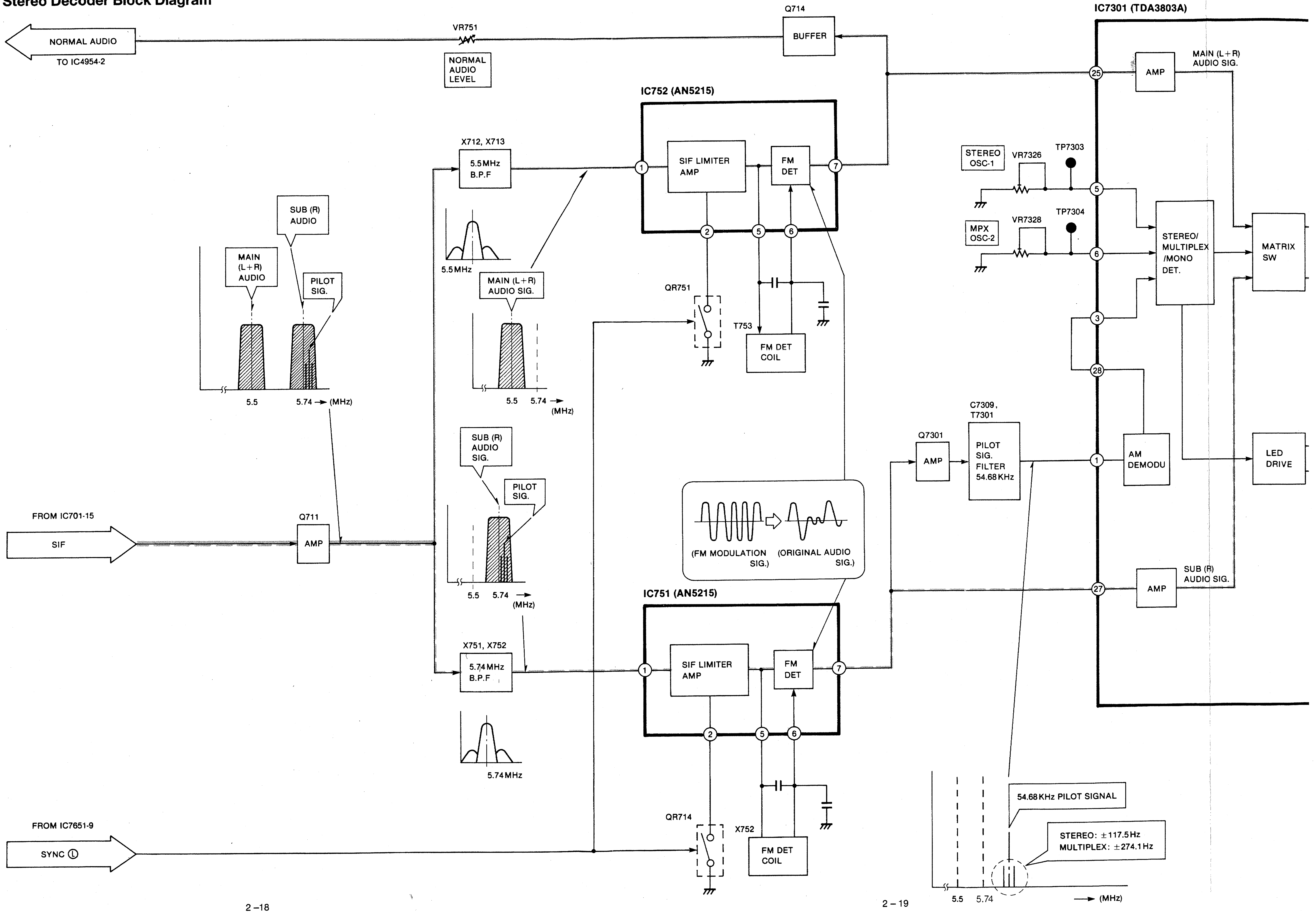


Hi-Fi AUDIO PACK C.B.A.
(VEP04225A)
A MUT Ⓗ
P4501 18
X2 Ⓗ
P4501 12
AUDIO IN (L)
P4501 28
AUDIO IN (R)
P4501 26
TUNER Ⓗ
MPX Ⓗ
QR4651 Q4651 QR4652
QR4503
IC4501 (BA7721S)
AUTO LEVEL CONTROL
FL4503
20KHz L.P.F
FL4501
MUT
REC: EMPHASIS-1
REC: EMPHASIS-2
REC
P.B
AMP
BUFFER
WEIGHTING
DET
V/I
C.C.A
VR4502
LCH DEVIATION
RCH DEVIATION
VR4507
QR4501
Q4652 QR4651 QR4652
INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04173R)
CCA INPUT LEVEL [dB]
STANDARD LEVEL [0dB]
RECORDING (COMPRESSION)
PLAYBACK (EXPANSION)
CCA OUTPUT LEVEL [dB]
FL4506
2MHz L.P.F
VR4503
REC CURR.
Q4502, Q4503
REC AMP
P4502 P502
EXCEPT REC 5V
P501
Q551
Q552 (P.B: ON)
IC551 (µPC1531HA)
PRE-AMP
QR551 (REC: ON)
QR552 (REC: ON)
D.A. REC 12V
HEAD AMP C.B.A. (VEP05111B)
SMALL RF OUTPUT (IC551-4, 6)
PRE-AMP OUT (IC551-2, 8)
DISCONTINUOUS PHASE AT DC OFFSET PORTION
AUDIO H. SW (25Hz)
1.4MHz 1.8MHz
P002
L AZIMUTH HEAD
R AZIMUTH HEAD
AUDIO HEAD-R (36µm)
AUDIO HEAD-L (36µm)
IC4504 (BA7056LS) (OUTPUT SELECTOR)
H.P. AMP
OUTPUT MATRIX
LINE AMP
MUT
DECODER
QR4509
QR4510
MODE SELECT P4501 11
X2 Ⓗ P4501 12
A DUB PAUSE Ⓗ P4501 22
+12V
RCH Ⓛ P4501 4 TO LEVEL METER
LCH Ⓛ P4501 5 TO LEVEL METER
AUDIO MUT Ⓗ P4501 18 FROM SYSTEM CONTROL
IC4502 (BA7711S)
+B
VR4501
LCH FREQ.
LIMITTER
AMP
V.C.O
1.4MHz
HOLD
PHASE COMPARATOR
VR4504
VR4506
P.B LEVEL
VR4509
RCH FREQ.
DEVIATION (300KHz)
1.8MHz
H. SW (25Hz)
60°
AUDIO H. SW (25Hz)
TIMING OF H. SW AND AUDIO H. SW
IC4651 (TA7302P)
IC4652 (TA7302P)
FL4651 1.4MHz B.P.F
FL4652 1.8MHz B.P.F
FL4653 1.6MHz B.P.F
QR4507
EE Ⓗ
REG 5V
AUDIO MUTE
VR4505
VR4510
AUDIO H. SW
TP4511
IC4503 (AN3920K)
RF AMP
VARIABLE AMP
SW
FF
M.M.V (1)
M.M.V (2)
TRIGGER PULSE GENERATOR (1)
TRIGGER PULSE GENERATOR (2)
TRIGGER PULSE GENERATOR (3)
FREQUENCY DOUBLER
D.O.C DETECTOR
FM/LINEAR DETECTOR
QR4508
H. SW P4501 14 FROM SERVO
ENVE LEVEL P4501 20 TO LEVEL METER

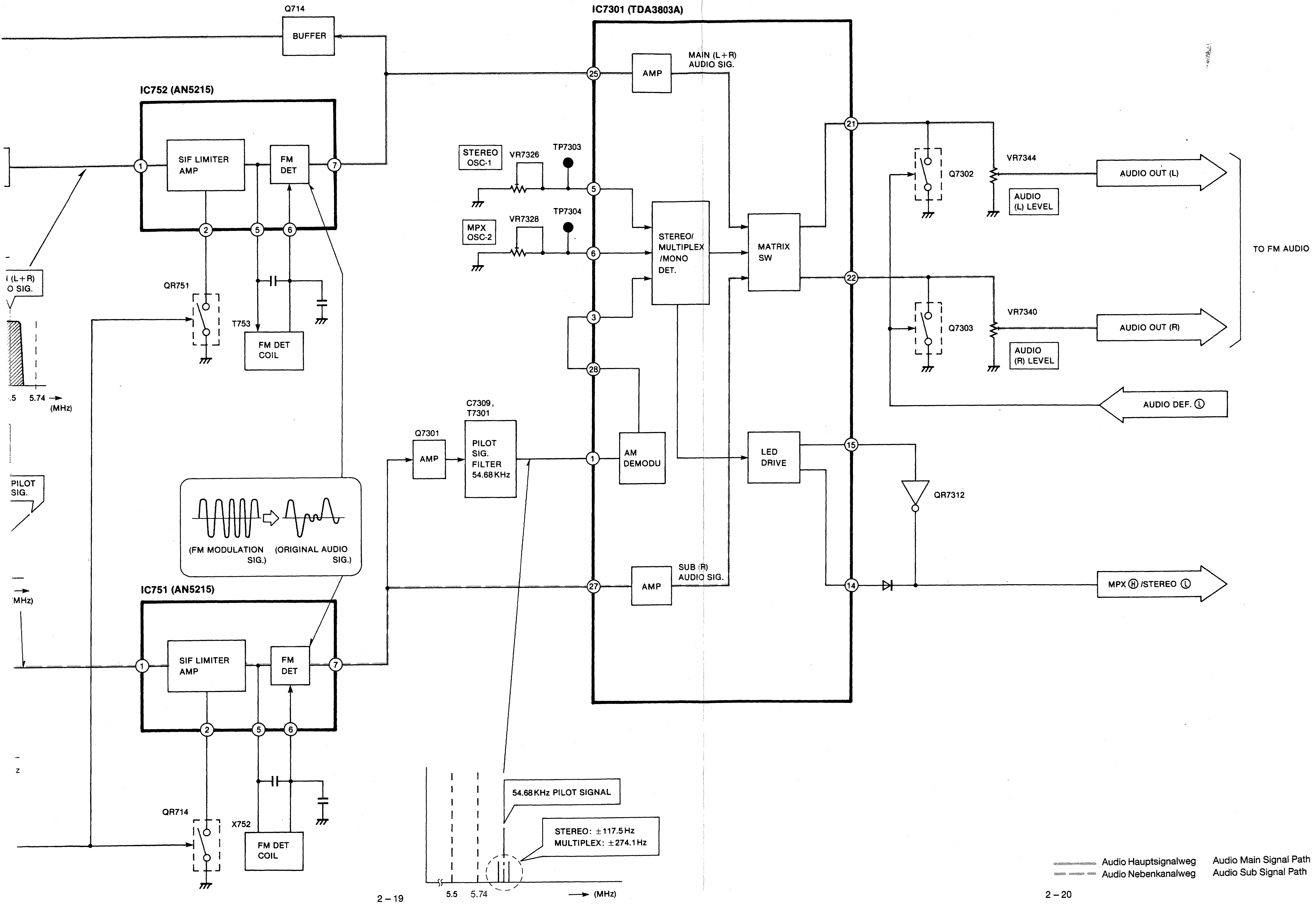
▬	Signalweg Aufnahme	Main Signal Path in REC Mode
▭	Signalweg Wiedergabe	Main Signal Path in Playback Mode

Blockschaltbild Stereo-Dekoder
Stereo Decoder Block Diagram

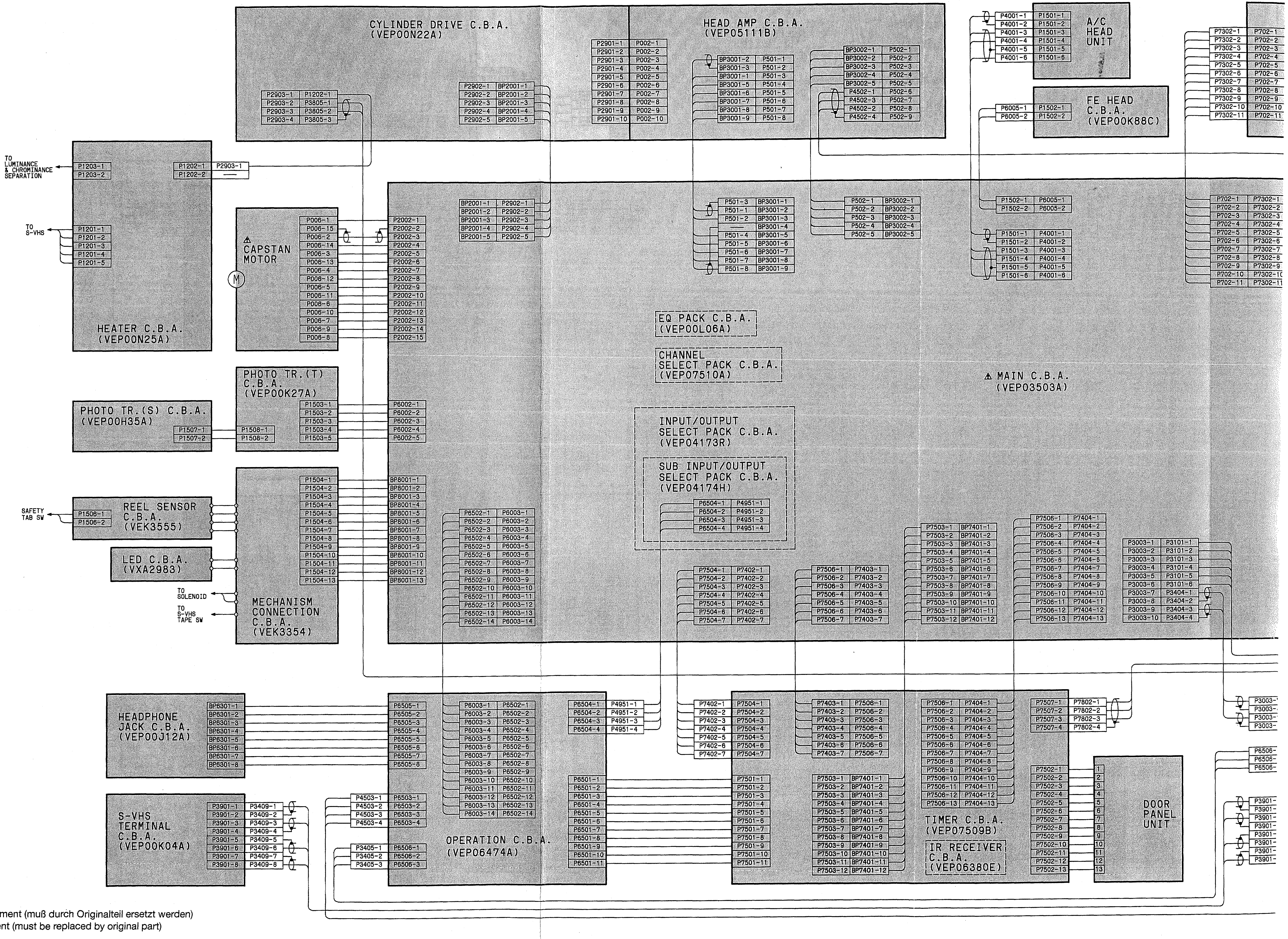
Blockscha
Stereo De


NORMAL AUDIO
TO IC4954-2
VR751
NORMAL AUDIO LEVEL
Q714
BUFFER
IC7301 (TDA3803A)
MAIN (L+R) AUDIO SIG.
AMP
25
IC752 (AN5215)
X712, X713
5.5MHz B.P.F
SIF LIMITER AMP
FM DET
1
7
2
5
6
5.5MHz
MAIN (L+R) AUDIO SIG.
SUB (R) AUDIO
MAIN (L+R) AUDIO
PILOT SIG.
5.5
5.74 → (MHz)
5.5
5.74 →
(MHz)
QR751
T753
FM DET COIL
STEREO OSC-1
VR7326
TP7303
MPX OSC-2
VR7328
TP7304
5
6
3
28
STEREO/ MULTIPLEX /MONO DET.
MATRIX SW
C7309, T7301
Q7301
AMP
PILOT SIG. FILTER 54.68KHz
1
AM DEMODU
LED DRIVE
SUB (R) AUDIO SIG.
PILOT SIG.
FROM IC701-15
SIF
Q711
AMP
(FM MODULATION SIG.)
(ORIGINAL AUDIO SIG.)
5.5
5.74 →
(MHz)
SUB (R) AUDIO SIG.
AMP
27
IC751 (AN5215)
X751, X752
5.74MHz B.P.F
SIF LIMITER AMP
FM DET
1
7
2
5
6
5.74MHz
QR714
X752
FM DET COIL
FROM IC7651-9
SYNC Ⓛ
54.68KHz PILOT SIGNAL
STEREO: ±117.5Hz
MULTIPLEX: ±274.1Hz
5.5
5.74
→ (MHz)

Blockschaltbild Stereo-Dekoder
Stereo Decoder Block Diagram

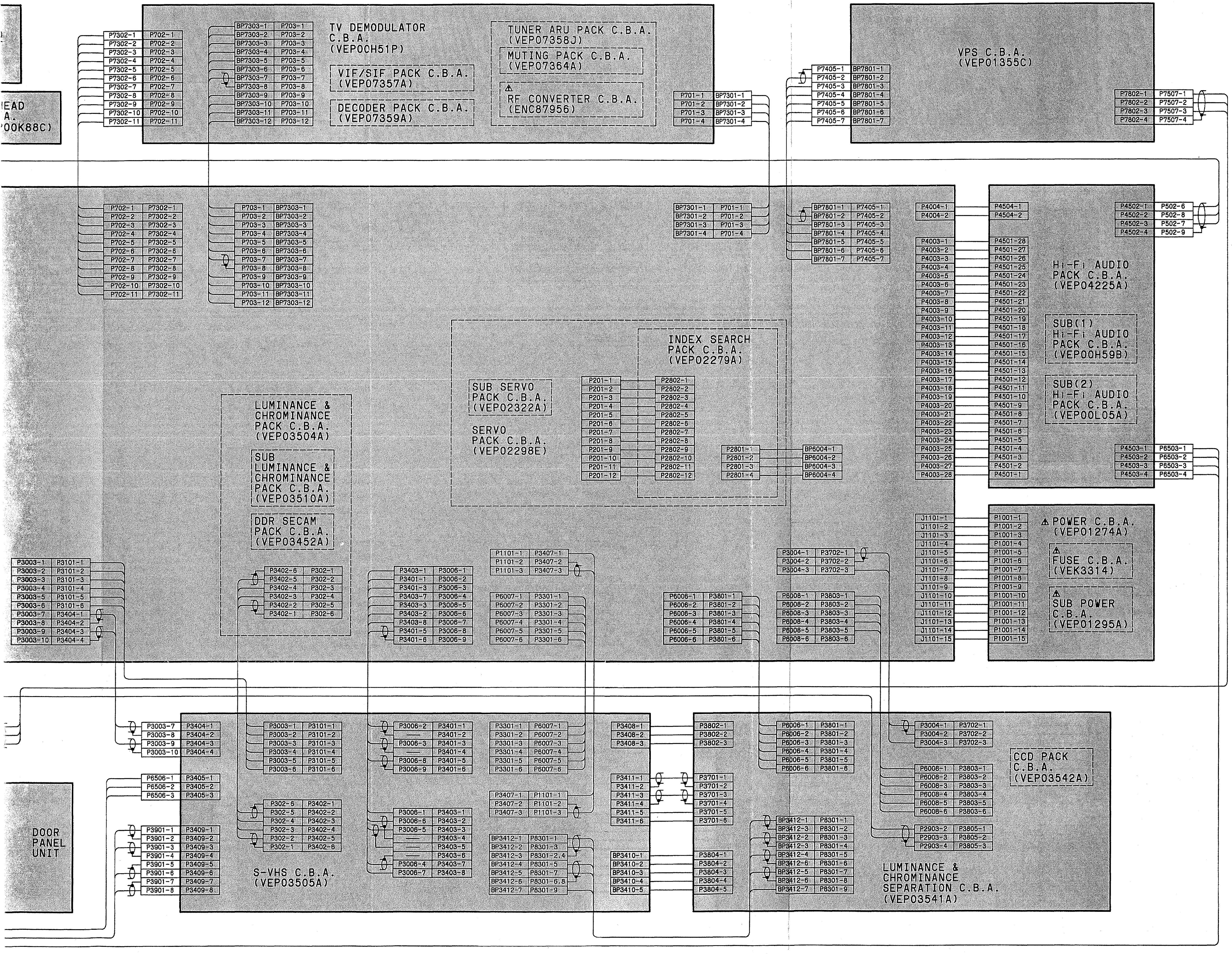

Q714
BUFFER
IC752 (AN5215)
SIF LIMITER AMP
FM DET
1
2
5
6
7
QR751
T753
FM DET COIL
(L+R)
O SIG.
.5
5.74
(MHz)
PILOT
SIG.
MHz)
z
(FM MODULATION SIG.)
(ORIGINAL AUDIO SIG.)
IC751 (AN5215)
SIF LIMITER AMP
FM DET
QR714
X752
FM DET COIL
IC7301 (TDA3803A)
AMP
MAIN (L+R) AUDIO SIG.
25
STEREO OSC-1
VR7326
TP7303
MPX OSC-2
VR7328
TP7304
STEREO/ MULTIPLEX /MONO DET.
MATRIX SW
21
22
3
28
C7309, T7301
Q7301
AMP
PILOT SIG. FILTER 54.68 KHz
AM DEMODU
LED DRIVE
15
14
27
SUB (R) AUDIO SIG.
Q7302
VR7344
AUDIO OUT (L)
AUDIO (L) LEVEL
TO FM AUDIO
Q7303
VR7340
AUDIO OUT (R)
AUDIO (R) LEVEL
AUDIO DEF. Ⓛ
QR7312
MPX Ⓗ /STEREO Ⓛ
54.68 KHz PILOT SIGNAL
STEREO: ±117.5 Hz
MULTIPLEX: ±274.1 Hz
5.5
5.74
(MHz)
Audio Hauptsignalweg
Audio Nebenkanalweg
Audio Main Signal Path
Audio Sub Signal Path

Verdrahtungsplan (EGC)
Interconnection Schematic Diagram (EGC)


CYLINDER DRIVE C.B.A. (VEP00N22A)
HEAD AMP C.B.A. (VEP05111B)
A/C HEAD UNIT
FE HEAD C.B.A. (VEP00K88C)
TO LUMINANCE & CHROMINANCE SEPARATION
TO S-VHS
HEATER C.B.A. (VEP00N25A)
⚠ CAPSTAN MOTOR
M
PHOTO TR.(T) C.B.A. (VEP00K27A)
PHOTO TR.(S) C.B.A. (VEP00H35A)
SAFETY TAB SW
REEL SENSOR C.B.A. (VEK3555)
LED C.B.A. (VXA2983)
TO SOLENOID
TO S-VHS TAPE SW
MECHANISM CONNECTION C.B.A. (VEK3354)
EQ PACK C.B.A. (VEP00L06A)
CHANNEL SELECT PACK C.B.A. (VEP07510A)
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173R)
SUB INPUT/OUTPUT SELECT PACK C.B.A. (VEP04174H)
⚠ MAIN C.B.A. (VEP03503A)
HEADPHONE JACK C.B.A. (VEP00J12A)
S-VHS TERMINAL C.B.A. (VEP00K04A)
OPERATION C.B.A. (VEP06474A)
TIMER C.B.A. (VEP07509B)
IR RECEIVER C.B.A. (VEP06380E)
DOOR PANEL UNIT

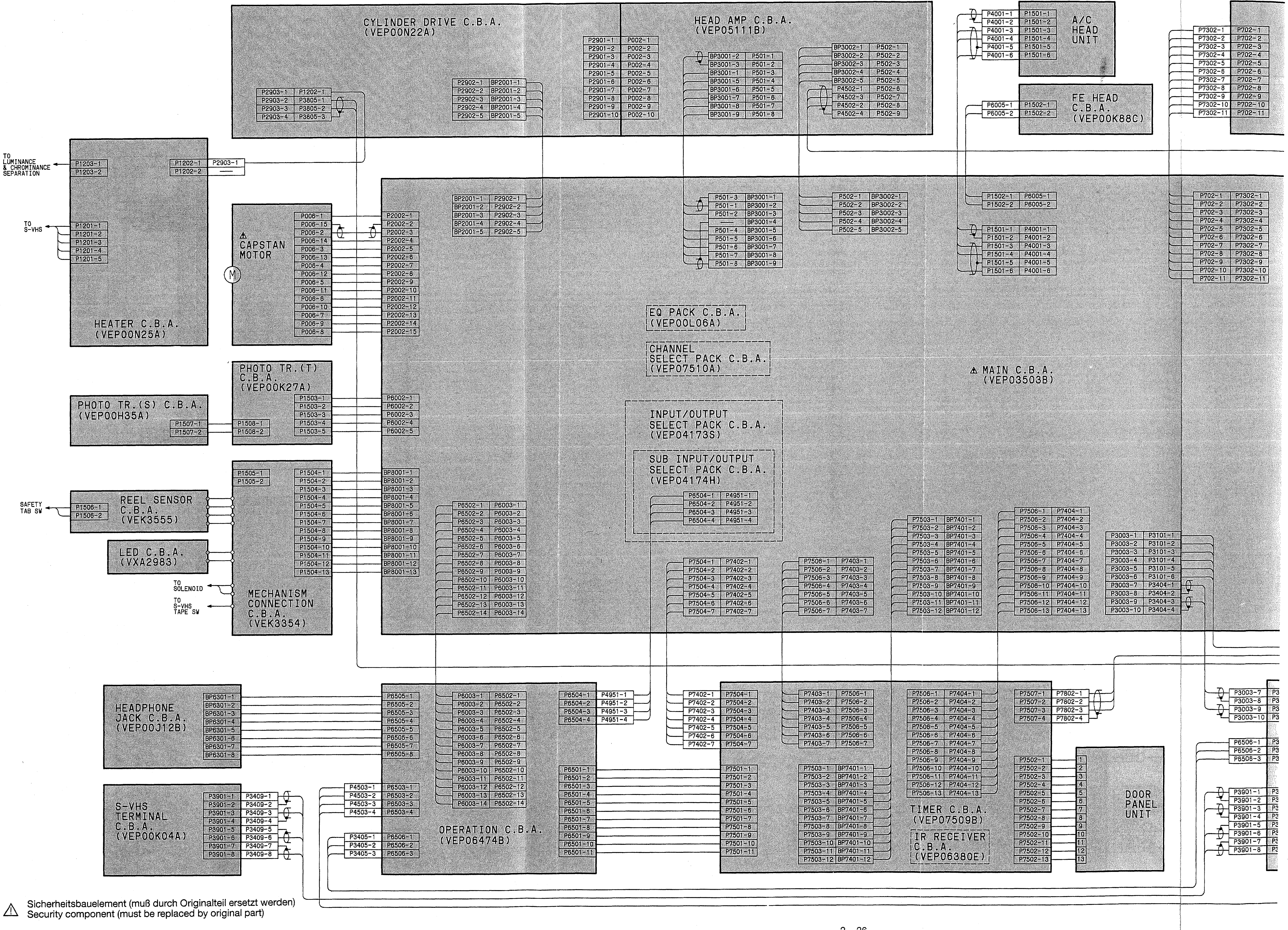
⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Verdrahtungsplan (EGC)
Interconnection Schematic Diagram (EGC)



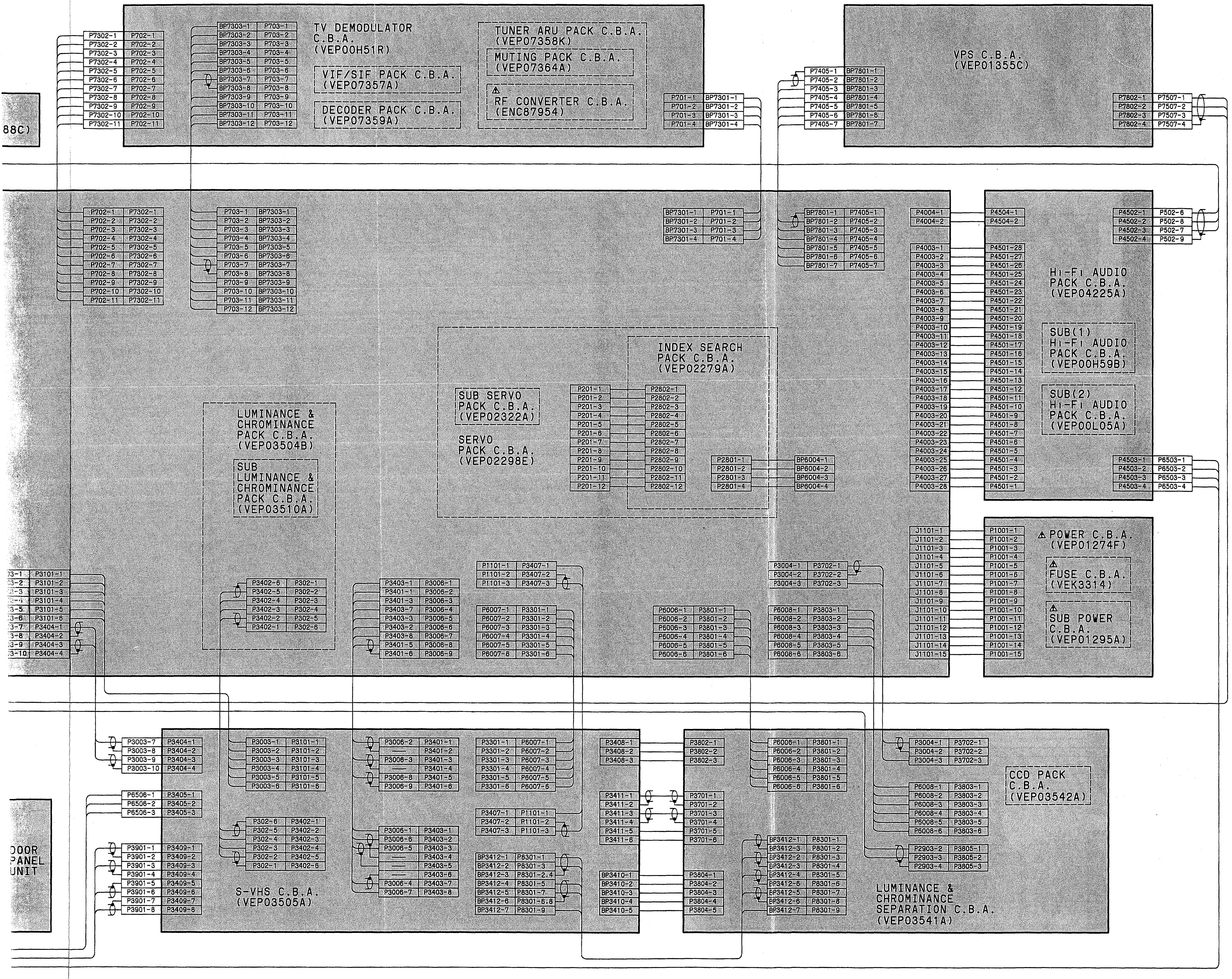
TV DEMODULATOR C.B.A. (VEP0CH51P)
VIF/SIF PACK C.B.A. (VEP07357A)
DECODER PACK C.B.A. (VEP07359A)
TUNER ARU PACK C.B.A. (VEP07358J)
MUTING PACK C.B.A. (VEP07364A)
⚠ RF CONVERTER C.B.A. (ENC87956)
VPS C.B.A. (VEP01355C)
Hi-Fi AUDIO PACK C.B.A. (VEP04225A)
SUB(1) Hi-Fi AUDIO PACK C.B.A. (VEP00H59B)
SUB(2) Hi-Fi AUDIO PACK C.B.A. (VEP00L05A)
⚠ POWER C.B.A. (VEP01274A)
⚠ FUSE C.B.A. (VEK3314)
⚠ SUB POWER C.B.A. (VEP01295A)
INDEX SEARCH PACK C.B.A. (VEP02279A)
SUB SERVO PACK C.B.A. (VEP02322A)
SERVO PACK C.B.A. (VEP02298E)
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504A)
SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03510A)
DDR SECAM PACK C.B.A. (VEP03452A)
S-VHS C.B.A. (VEP03505A)
CCD PACK C.B.A. (VEP03542A)
LUMINANCE & CHROMINANCE SEPARATION C.B.A. (VEP03541A)
DOOR PANEL UNIT
EAD
A.
00K88C)

Verdrahtungsplan (ECV)
Interconnection Schematic Diagram (ECV)

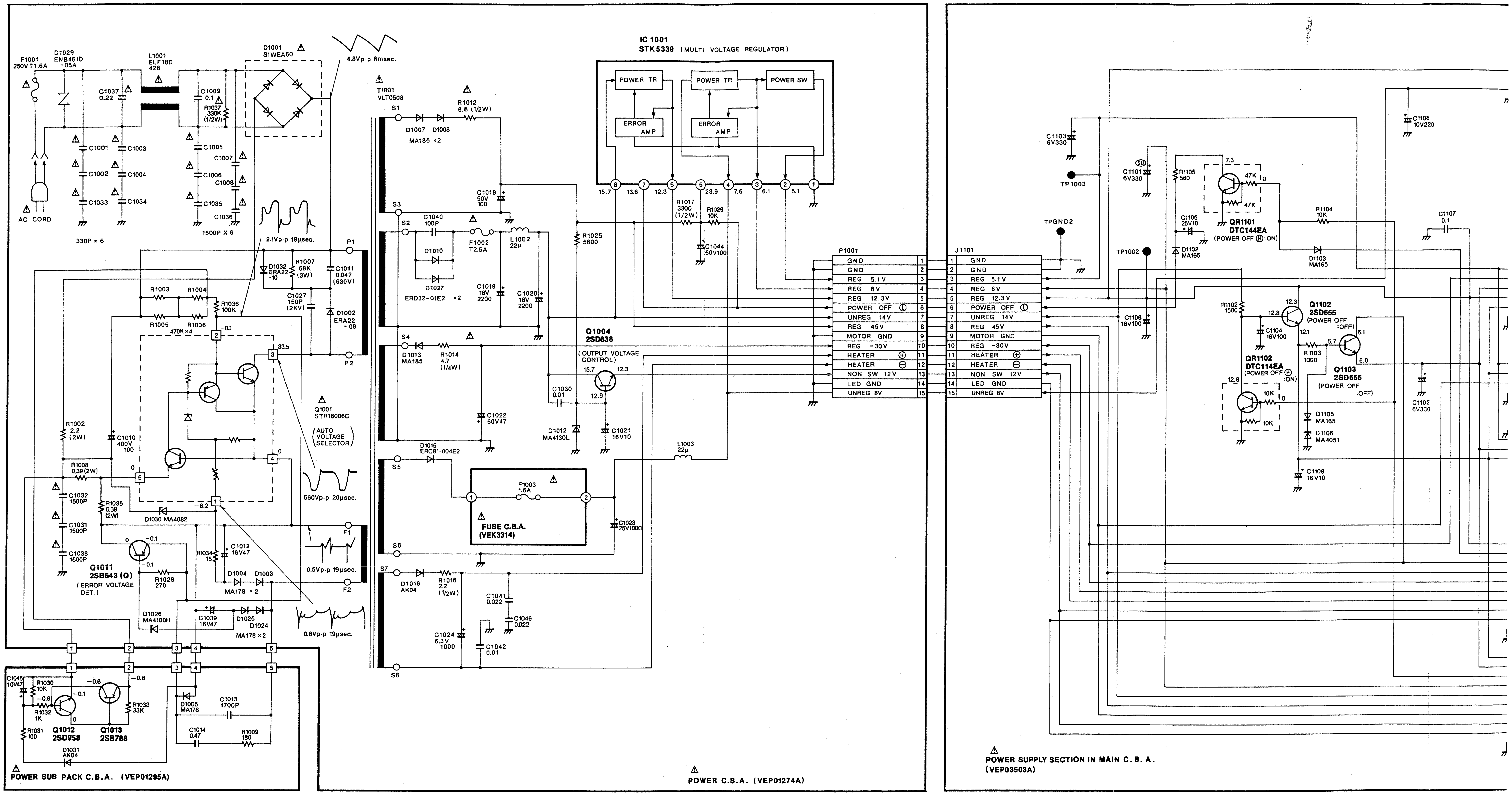

CYLINDER DRIVE C.B.A. (VEP00N22A)
HEAD AMP C.B.A. (VEP05111B)
A/C HEAD UNIT
FE HEAD C.B.A. (VEP00K88C)
TO LUMINANCE & CHROMINANCE SEPARATION
TO S-VHS
HEATER C.B.A. (VEP00N25A)
CAPSTAN MOTOR
M
PHOTO TR.(T) C.B.A. (VEP00K27A)
PHOTO TR.(S) C.B.A. (VEP00H35A)
SAFETY TAB SW
REEL SENSOR C.B.A. (VEK3555)
LED C.B.A. (VXA2983)
TO SOLENOID
TO S-VHS TAPE SW
MECHANISM CONNECTION C.B.A. (VEK3354)
EQ PACK C.B.A. (VEP00L06A)
CHANNEL SELECT PACK C.B.A. (VEP07510A)
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173S)
SUB INPUT/OUTPUT SELECT PACK C.B.A. (VEP04174H)
MAIN C.B.A. (VEP03503B)
HEADPHONE JACK C.B.A. (VEP00J12B)
S-VHS TERMINAL C.B.A. (VEP00K04A)
OPERATION C.B.A. (VEP06474B)
TIMER C.B.A. (VEP07509B)
IR RECEIVER C.B.A. (VEP06380E)
DOOR PANEL UNIT

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Verdrahtungsplan (ECV)
Interconnection Schematic Diagram (ECV)


TV DEMODULATOR C.B.A. (VEP00H51R)
VIF/SIF PACK C.B.A. (VEP07357A)
DECODER PACK C.B.A. (VEP07359A)
TUNER ARU PACK C.B.A. (VEP07358K)
MUTING PACK C.B.A. (VEP07364A)
⚠ RF CONVERTER C.B.A. (ENC87954)
VPS C.B.A. (VEP01355C)
88C)
INDEX SEARCH PACK C.B.A. (VEP02279A)
SUB SERVO PACK C.B.A. (VEP02322A)
SERVO PACK C.B.A. (VEP02298E)
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504B)
SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03510A)
Hi-Fi AUDIO PACK C.B.A. (VEP04225A)
SUB(1) Hi-Fi AUDIO PACK C.B.A. (VEP00H59B)
SUB(2) Hi-Fi AUDIO PACK C.B.A. (VEP00L05A)
⚠ POWER C.B.A. (VEP01274F)
⚠ FUSE C.B.A. (VEK3314)
⚠ SUB POWER C.B.A. (VEP01295A)
DOOR PANEL UNIT
S-VHS C.B.A. (VEP03505A)
LUMINANCE & CHROMINANCE SEPARATION C.B.A. (VEP03541A)
CCD PACK C.B.A. (VEP03542A)

Schaltbild Netzteil
Power Supply Schematic Diagram

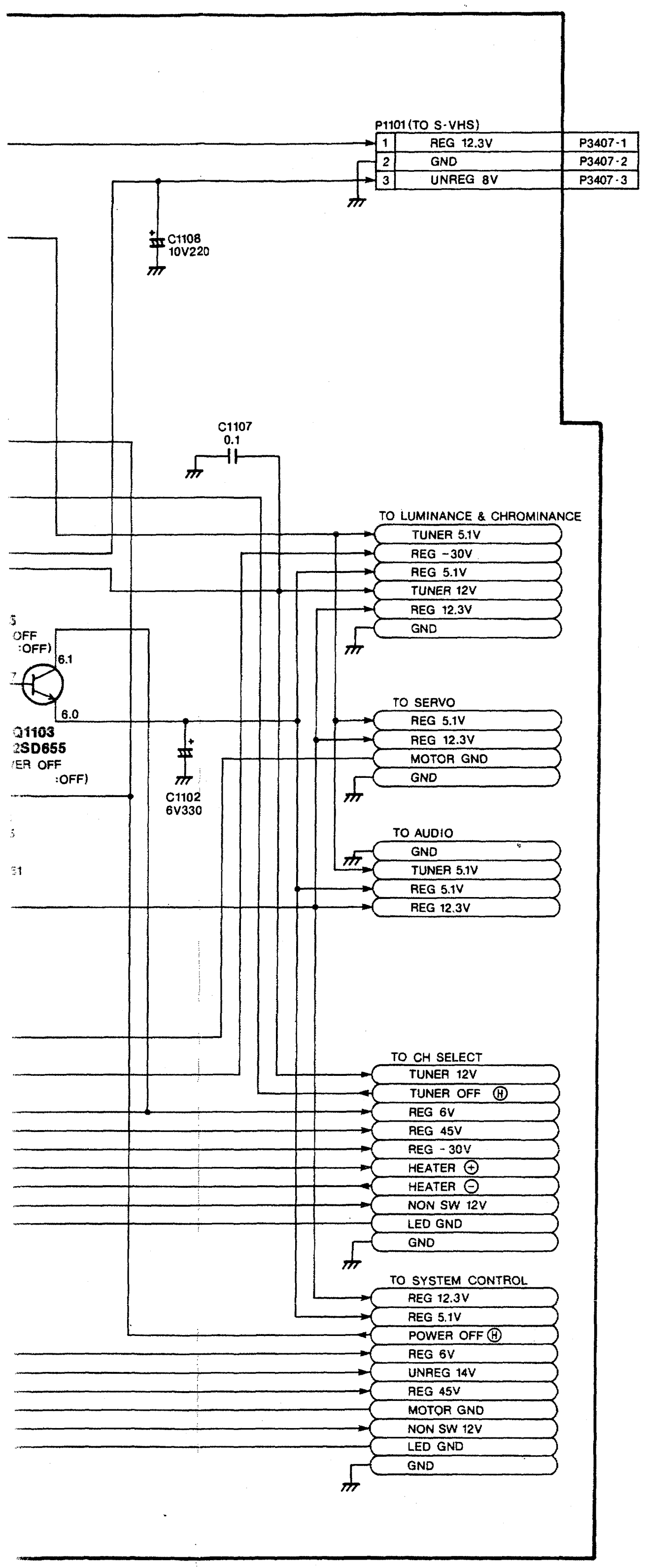

F1001
250V T1.6A
D1029
ENB461D
-05A
L1001
ELF18D
428
C1037
0.22
AC CORD
C1001
C1002
C1033
C1003
C1004
C1034
330P × 6
C1009
0.1
R1037
330K
(1/2W)
C1005
C1007
C1006
C1008
C1035
C1036
1500P X 6
D1001
S1WEA60
4.8Vp-p 8msec.
T1001
VLT0508
S1
R1012
6.8 (1/2W)
D1007 D1008
MA185 ×2
C1018
50V
100
S3
S2
C1040
100P
F1002
T2.5A
L1002
22μ
D1010
D1027
ERD32-01E2 ×2
C1019
18V
2200
C1020
18V
2200
S4
D1013
MA185
R1014
4.7
(1/4W)
C1022
50V47
D1015
ERC81-004E2
S5
F1003
1.6A
FUSE C.B.A.
(VEK3314)
C1023
25V1000
S6
S7
D1016
AK04
R1016
2.2
(1/2W)
C1041
0.022
C1046
0.022
C1024
6.3V
1000
C1042
0.01
S8
2.1Vp-p 19μsec.
P1
D1032
ERA22
-10
R1007
68K
(3W)
C1011
0.047
(630V)
C1027
150P
(2KV)
D1002
ERA22
-08
P2
R1003
R1004
R1005
R1006
470K × 4
R1036
100K
-0.1
33.5
Q1001
STR16006C
(AUTO VOLTAGE SELECTOR)
560Vp-p 20μsec.
R1002
2.2
(2W)
C1010
400V
100
R1008
0.39(2W)
C1032
1500P
R1035
0.39
(2W)
C1031
1500P
C1038
1500P
D1030 MA4082
-6.2
Q1011
2SB643 (Q)
(ERROR VOLTAGE DET.)
R1028
270
R1034
15
C1012
16V47
D1004 D1003
MA178 × 2
D1026
MA4100H
C1039
16V47
D1025
D1024
MA178 × 2
F1
F2
0.5Vp-p 19μsec.
0.8Vp-p 19μsec.
C1045
10V47
R1030
10K
R1032
1K
R1031
100
Q1012
2SD958
Q1013
2SB788
R1033
33K
D1031
AK04
D1005
MA178
C1013
4700P
C1014
0.47
R1009
180
POWER SUB PACK C.B.A. (VEP01295A)
IC 1001
STK5339 (MULTI VOLTAGE REGULATOR)
POWER TR
POWER TR
POWER SW
ERROR AMP
ERROR AMP
15.7
13.6
12.3
23.9
7.6
6.1
5.1
R1017
3300
(1/2W)
R1029
10K
C1044
50V100
R1025
5600
Q1004
2SD638
(OUTPUT VOLTAGE CONTROL)
15.7
12.3
12.9
C1030
0.01
D1012
MA4130L
C1021
16V10
L1003
22μ
POWER C.B.A. (VEP01274A)
P1001
J1101
1 GND
2 GND
3 REG 5.1V
4 REG 6V
5 REG 12.3V
6 POWER OFF Ⓛ
7 UNREG 14V
8 REG 45V
9 MOTOR GND
10 REG -30V
11 HEATER ⊕
12 HEATER ⊖
13 NON SW 12V
14 LED GND
15 UNREG 8V
C1103
6V330
TP1003
TPGND2
TP1002
C1101
6V330
R1105
560
C1105
25V10
D1102
MA165
7.3
47K
47K
QR1101
DTC144EA
(POWER OFF Ⓗ:ON)
R1104
10K
D1103
MA165
C1107
0.1
C1108
10V220
C1106
16V100
R1102
1500
12.3
12.8
C1104
16V100
Q1102
2SD655
(POWER OFF :OFF)
12.1
R1103
1000
5.7
6.1
6.0
Q1103
2SD655
(POWER OFF :OFF)
QR1102
DTC114EA
(POWER OFF Ⓗ :ON)
12.8
10K
10K
D1105
MA165
D1106
MA4051
C1109
16V10
C1102
6V330
POWER SUPPLY SECTION IN MAIN C.B.A.
(VEP03503A)

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Primär = Q 1001 pin 5 / Sekundär = Masse).

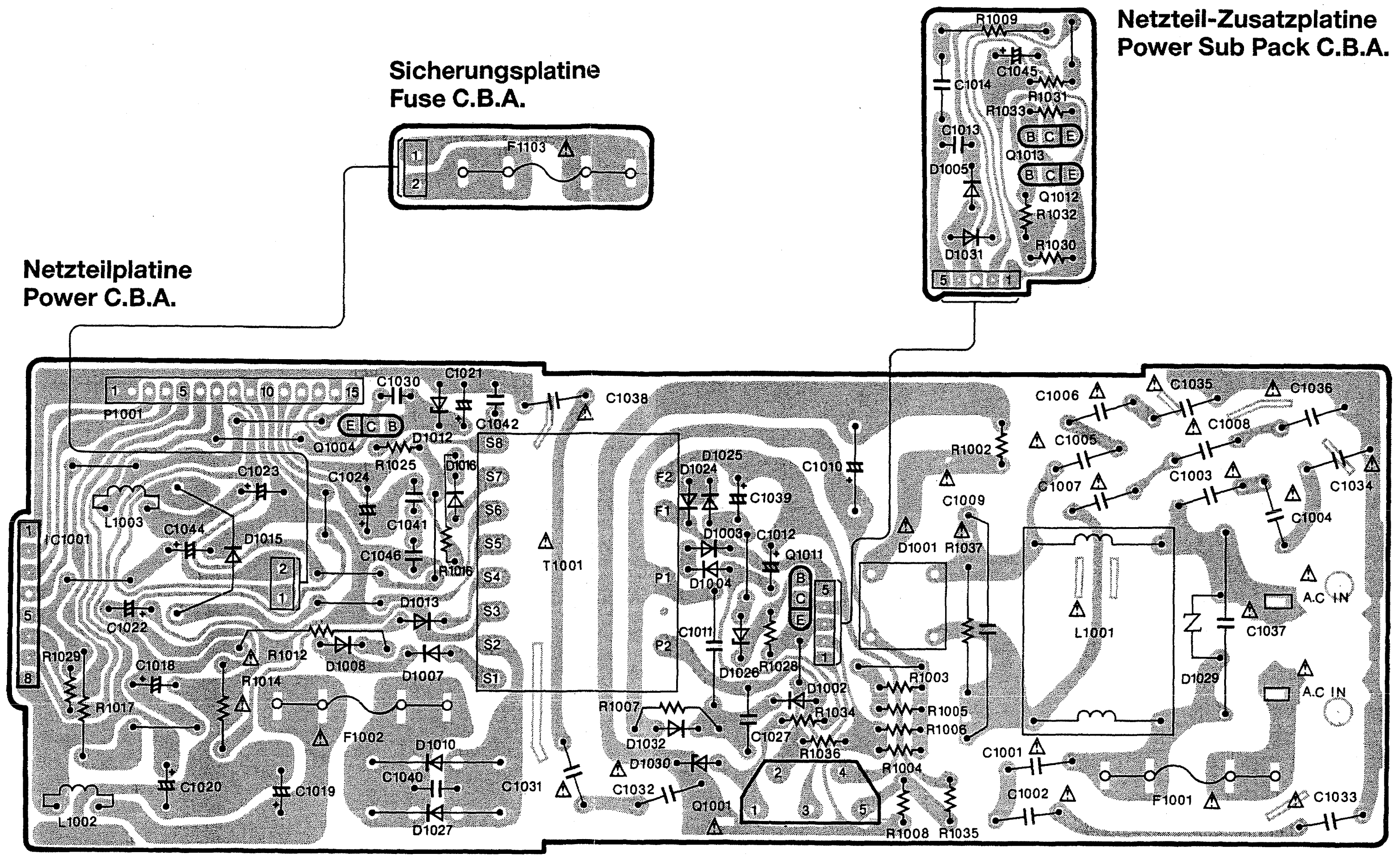
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (primary = Q 1001 pin 5 / secondary = GND).

Für Werte ohne Bezeichnur
Read F (μF) or Ω respective

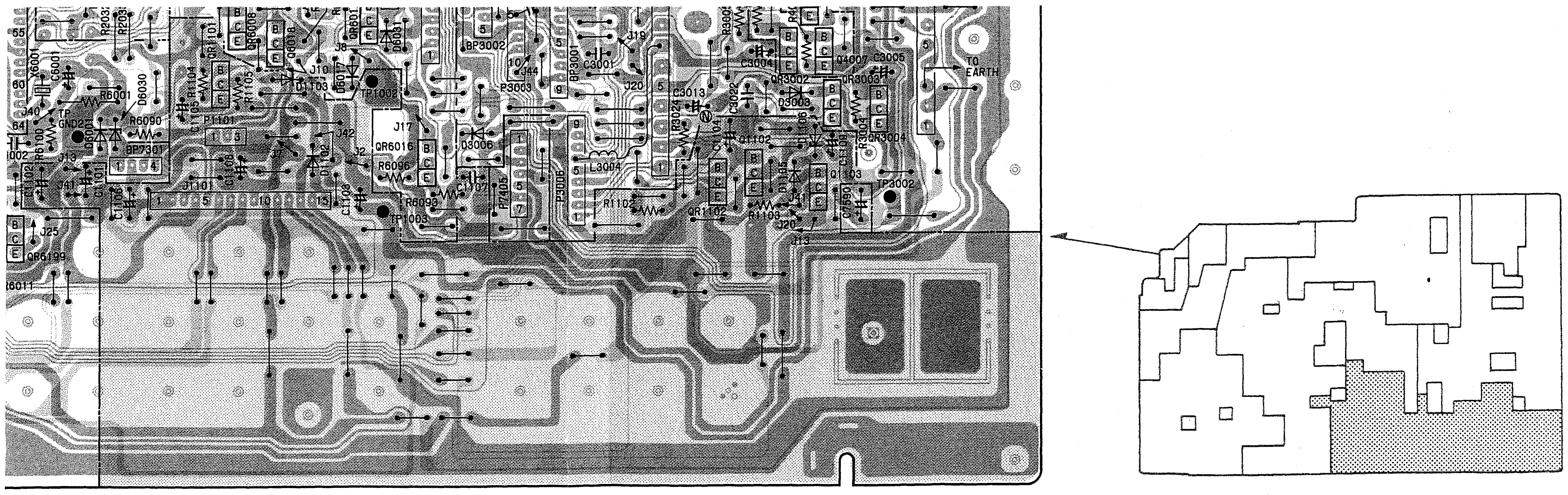

P1101 (TO S-VHS)
1 REG 12.3V P3407-1
2 GND P3407-2
3 UNREG 8V P3407-3
C1108 10V220
C1107 0.1
TO LUMINANCE & CHROMINANCE
TUNER 5.1V
REG −30V
REG 5.1V
TUNER 12V
REG 12.3V
GND
6.1
6.0
Q1103
2SD655
TO SERVO
REG 5.1V
REG 12.3V
MOTOR GND
GND
C1102 6V330
TO AUDIO
GND
TUNER 5.1V
REG 5.1V
REG 12.3V
TO CH SELECT
TUNER 12V
TUNER OFF Ⓗ
REG 6V
REG 45V
REG −30V
HEATER ⊕
HEATER ⊖
NON SW 12V
LED GND
GND
TO SYSTEM CONTROL
REG 12.3V
REG 5.1V
POWER OFF Ⓗ
REG 6V
UNREG 14V
REG 45V
MOTOR GND
NON SW 12V
LED GND
GND

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Netzteilplatine
Power Supply C.B.A.


Sicherungsplatine
Fuse C.B.A.
F1103
Netzteil-Zusatzplatine
Power Sub Pack C.B.A.
R1009
C1045
C1014
R1031
R1033
C1013
Q1013
D1005
Q1012
R1032
R1030
D1031
Netzteilplatine
Power C.B.A.
P1001
C1030
C1021
C1042
Q1004
D1012
C1038
C1023
R1025
C1024
D1016
L1003
C1044
D1015
C1041
C1046
C1001
C1022
D1013
R1029
C1018
R1012
D1008
D1007
R1017
R1014
F1002
D1010
C1040
C1020
C1019
L1002
D1027
C1031
T1001
D1025
D1024
C1039
C1010
C1012
D1003
Q1011
D1004
C1011
R1028
D1026
D1002
R1007
R1034
D1032
D1030
R1036
C1027
C1032
Q1001
R1008
R1035
R1002
C1009
D1001
R1037
R1003
R1005
R1006
R1004
C1006
C1035
C1036
C1005
C1008
C1007
C1003
C1034
C1004
L1001
A.C IN
C1037
D1029
C1001
C1002
F1001
C1033

Netzteil auf der Hauptplatine
Power Supply Section in Main C.B.A.


TO EARTH
TP1002
TP1003
TP3002
P1101
J1101
L3004
Q1102
QR1102
R1102
Q1103
R1103
BP3002
BP7301
P3003
P7405

Schaltbild der Systemsteuerung
System Control Schematic Diagram

Schaltbild
System Co

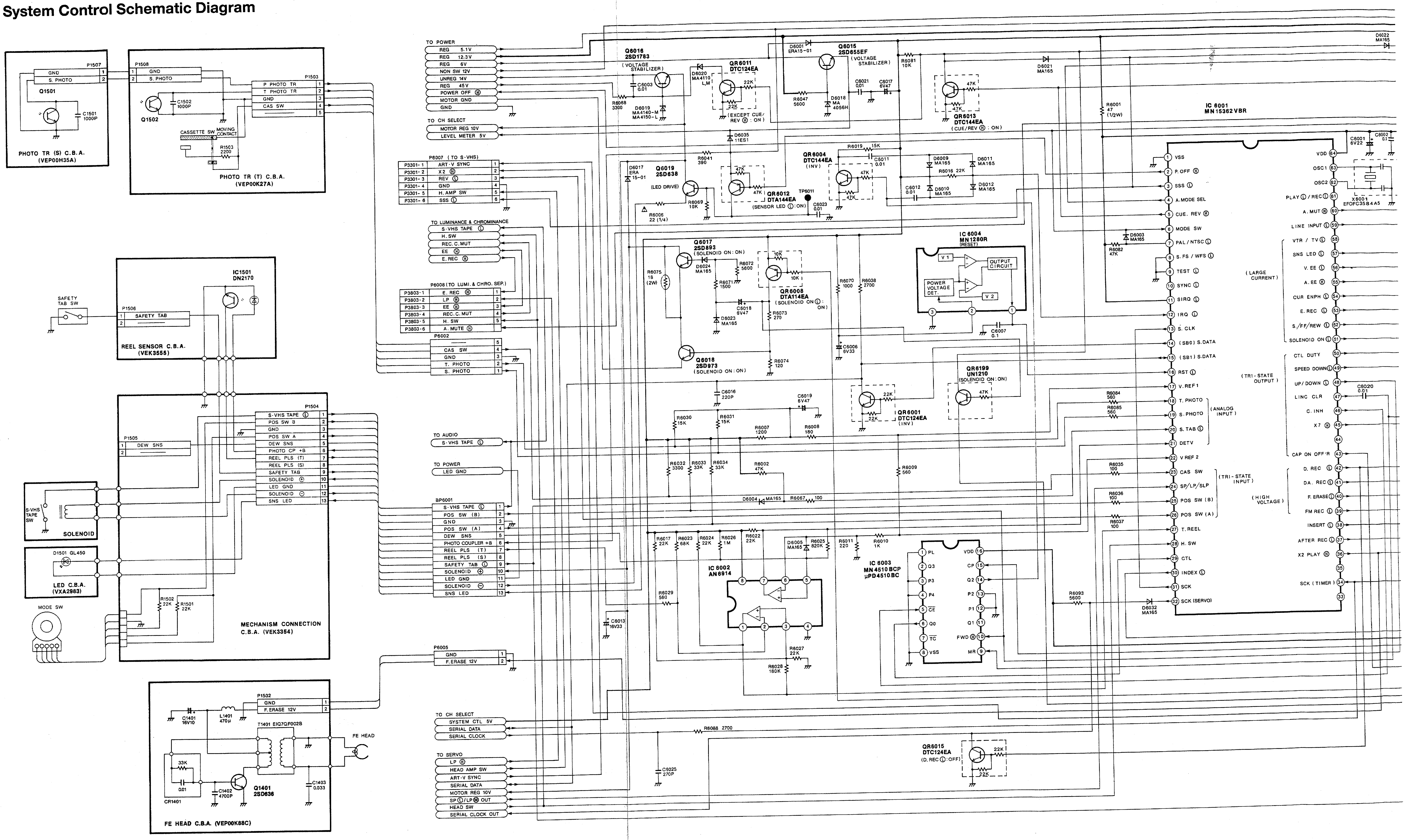
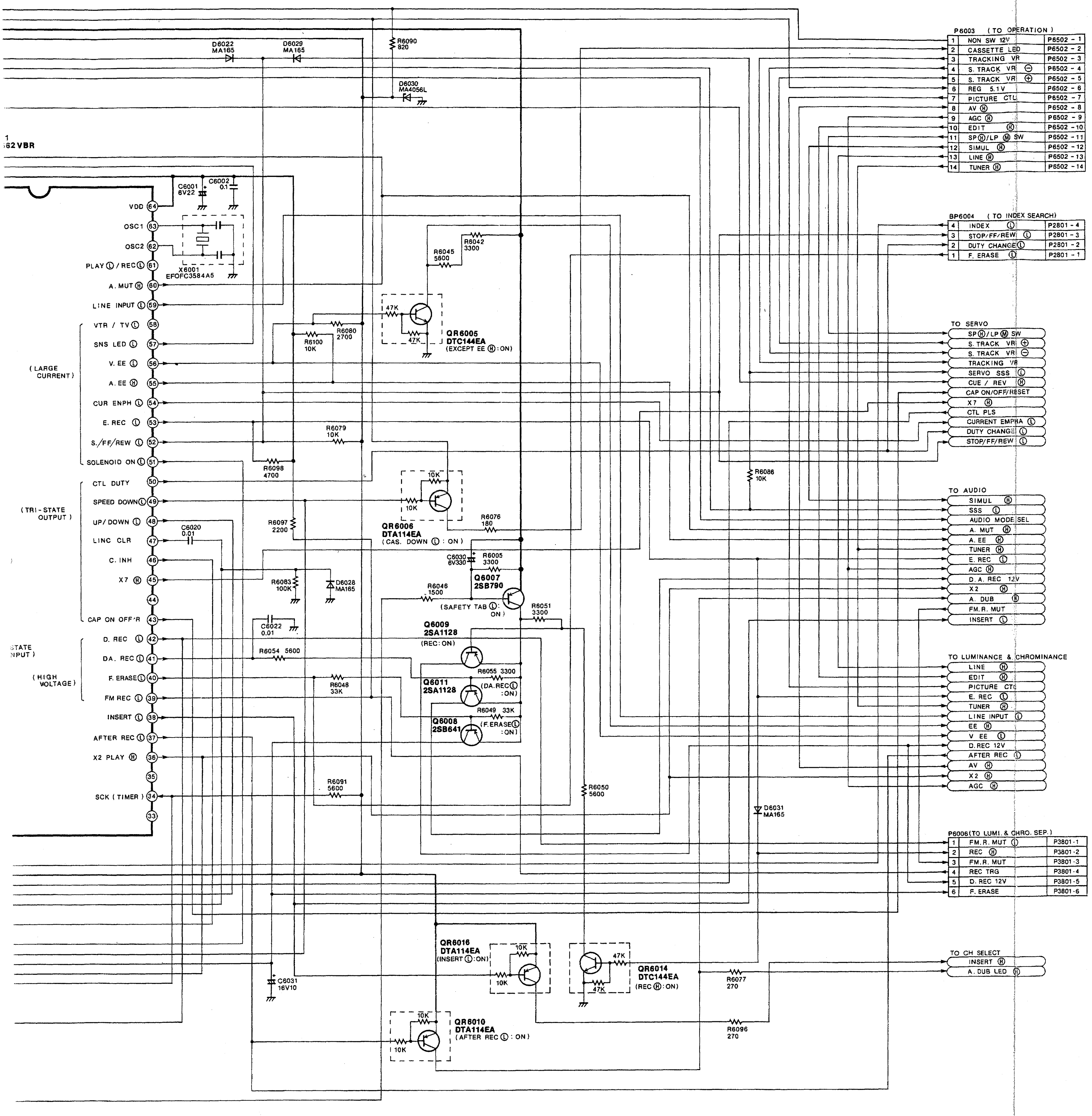


PHOTO TR (S) C.B.A. (VEP00H35A)
Q1501
C1501 1000P
P1507
GND
S. PHOTO
PHOTO TR (T) C.B.A. (VEP00K27A)
Q1502
C1502 1000P
P1508
P1503
P PHOTO TR
T PHOTO TR
CAS SW
CASSETTE SW
MOVING CONTACT
R1503 2200
SAFETY TAB SW
P1506
SAFETY TAB
REEL SENSOR C.B.A. (VEK3555)
IC1501 DN2170
P1505
DEW SNS
P1504
S-VHS TAPE
POS SW B
POS SW A
PHOTO CP +B
REEL PLS (T)
REEL PLS (S)
SOLENOID ⊕
LED GND
SOLENOID ⊖
SNS LED
S-VHS TAPE SW
SOLENOID
D1501 GL450
LED C.B.A. (VXA2983)
MODE SW
R1502 22K
R1501 22K
MECHANISM CONNECTION C.B.A. (VEK3354)
P1502
F. ERASE 12V
C1401 16V10
L1401 470μ
T1401 EIQ7QF002B
FE HEAD
33K
0.01
C1402 4700P
Q1401 2SD636
C1403 0.033
CR1401
FE HEAD C.B.A. (VEP00K88C)
TO POWER
REG 5.1V
REG 12.3V
REG 6V
NON SW 12V
UNREG 14V
REG 45V
POWER OFF Ⓗ
MOTOR GND
TO CH SELECT
MOTOR REG 10V
LEVEL METER 5V
P6007 (TO S-VHS)
ART-V SYNC
X2 Ⓗ
REV Ⓛ
H. AMP SW
SSS Ⓛ
TO LUMINANCE & CHROMINANCE
S-VHS TAPE Ⓛ
H. SW
REC. C. MUT
EE Ⓗ
E. REC Ⓗ
P6008 (TO LUMI. & CHRO. SEP.)
E. REC Ⓗ
LP Ⓗ
A. MUTE Ⓗ
P6002
T. PHOTO
S. PHOTO
TO AUDIO
TO POWER
LED GND
BP6001
POS SW (B)
POS SW (A)
DEW SNS
PHOTO COUPLER +B
REEL PLS (T)
REEL PLS (S)
SAFETY TAB Ⓛ
P6005
F. ERASE 12V
TO CH SELECT
SYSTEM CTL 5V
SERIAL DATA
SERIAL CLOCK
TO SERVO
LP Ⓗ
HEAD AMP SW
ART-V SYNC
MOTOR REG 10V
SPⓁ/LPⓂ OUT
HEAD SW
SERIAL CLOCK OUT
Q6016 2SD1763 (VOLTAGE STABILIZER)
QR6011 DTC124EA
(EXCEPT CUE/REV Ⓗ : ON)
Q6015 2SD655EF (VOLTAGE STABILIZER)
D6001 ERA15-01
QR6013 DTC144EA (CUE/REV Ⓗ : ON)
Q6019 2SD638 (LED DRIVE)
QR6012 DTA144EA (SENSOR LED Ⓛ: ON)
QR6004 DTC144EA (INV)
TP6011
Q6017 2SD893 (SOLENOID ON: ON)
QR6008 DTA114EA (SOLENOID ON Ⓛ: ON)
Q6018 2SD973 (SOLENOID ON: ON)
IC6004 MN1280R (RESET)
OUTPUT CIRCUIT
POWER VOLTAGE DET.
QR6199 UN1210 (SOLENOID ON: ON)
QR6001 DTC124EA (INV)
IC6002 AN6914
IC6003 MN4510BCP μPD4510BC
QR6015 DTC124EA (D. REC Ⓛ: OFF)
IC6001 MN15362VBR
X6001 EFOFC3584A5
VSS
P. OFF Ⓗ
SSS Ⓛ
A. MODE SEL
CUE. REV Ⓗ
MODE SW
PAL/NTSC Ⓛ
S. FS/WFS Ⓛ
TEST Ⓛ
SYNC Ⓛ
SIRQ Ⓛ
IRQ Ⓛ
S. CLK
(SB0) S. DATA
(SB1) S. DATA
RST Ⓛ
V. REF 1
T. PHOTO
S. PHOTO
S. TAB Ⓛ
DETV
V REF 2
CAS SW
SP/LP/SLP
POS SW (B)
POS SW (A)
T. REEL
H. SW
CTL
INDEX Ⓛ
SCK
SCK (SERVO)
(ANALOG INPUT)
(TRI-STATE INPUT)
(TRI-STATE OUTPUT)
(LARGE CURRENT)
(HIGH VOLTAGE)
VDD
OSC1
OSC2
PLAY Ⓛ / REC Ⓛ
A. MUT Ⓗ
LINE INPUT Ⓛ
VTR / TV Ⓛ
SNS LED Ⓛ
V. EE Ⓛ
A. EE Ⓗ
CUR ENPH Ⓛ
E. REC Ⓛ
S./FF/REW Ⓛ
SOLENOID ON Ⓛ
CTL DUTY
SPEED DOWN Ⓛ
UP/DOWN Ⓛ
LINC CLR
C. INH
X7 Ⓗ
CAP ON OFF Ⓗ
D. REC Ⓛ
DA. REC Ⓛ
F. ERASE Ⓛ
FM REC Ⓛ
INSERT Ⓛ
AFTER REC Ⓛ
X2 PLAY Ⓗ
SCK (TIMER)
PL
Q3
P3
P4
CE
Q0
TC
VSS
VDD
CP
Q2
P2
P1
Q1
FWD Ⓗ
MR

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Schaltbild der Systemsteuerung
System Control Schematic Diagram



1
62VBR
VDD 64
OSC1 63
OSC2 62
PLAY Ⓛ / REC Ⓛ 61
A. MUT Ⓗ 60
LINE INPUT Ⓛ 59
VTR / TV Ⓛ 58
SNS LED Ⓛ 57
V. EE Ⓛ 56
A. EE Ⓗ 55
CUR ENPH Ⓛ 54
E. REC Ⓛ 53
S./FF/REW Ⓛ 52
SOLENOID ON Ⓛ 51
(LARGE CURRENT)
CTL DUTY 50
SPEED DOWN Ⓛ 49
UP/DOWN Ⓛ 48
LINC CLR 47
C. INH 46
X7 Ⓗ 45
44
CAP ON OFF'R 43
(TRI-STATE OUTPUT)
D. REC Ⓛ 42
DA. REC Ⓛ 41
F. ERASE Ⓛ 40
FM REC Ⓛ 39
(HIGH VOLTAGE)
STATE
NPUT)
INSERT Ⓛ 38
AFTER REC Ⓛ 37
X2 PLAY Ⓗ 36
35
SCK (TIMER) 34
33
C6001 6V22
C6002 0.1
X6001 EFOFC3584A5
C6020 0.01
C6022 0.01
C6031 16V10
R6097 2200
R6098 4700
R6083 100K
R6054 5600
D6028 MA165
D6022 MA165
D6029 MA165
R6090 820
D6030 MA4056L
R6100 10K
R6080 2700
R6079 10K
R6048 33K
R6091 5600
R6045 5600
R6042 3300
47K
QR6005 DTC144EA (EXCEPT EE Ⓗ : ON)
10K
QR6006 DTA114EA (CAS. DOWN Ⓛ : ON)
R6076 180
C6030 6V330
R6005 3300
R6046 1500
Q6007 2SB790
(SAFETY TAB Ⓛ : ON)
R6051 3300
Q6009 2SA1128 (REC : ON)
R6055 3300
Q6011 2SA1128 (DA.REC Ⓛ : ON)
R6049 33K
Q6008 2SB641 (F.ERASE Ⓛ : ON)
R6050 5600
R6086 10K
D6031 MA165
QR6016 DTA114EA (INSERT Ⓛ : ON)
QR6014 DTC144EA (REC Ⓗ : ON)
QR6010 DTA114EA (AFTER REC Ⓛ : ON)
R6077 270
R6096 270
P6003 (TO OPERATION)
1 NON SW 12V P6502 - 1
2 CASSETTE LED P6502 - 2
3 TRACKING VR P6502 - 3
4 S. TRACK VR ⊖ P6502 - 4
5 S. TRACK VR ⊕ P6502 - 5
6 REG 5.1V P6502 - 6
7 PICTURE CTL P6502 - 7
8 AV Ⓗ P6502 - 8
9 AGC Ⓗ P6502 - 9
10 EDIT Ⓗ P6502 - 10
11 SP Ⓗ / LP Ⓜ SW P6502 - 11
12 SIMUL Ⓗ P6502 - 12
13 LINE Ⓗ P6502 - 13
14 TUNER Ⓗ P6502 - 14
BP6004 (TO INDEX SEARCH)
4 INDEX Ⓛ P2801 - 4
3 STOP/FF/REW Ⓛ P2801 - 3
2 DUTY CHANGE Ⓛ P2801 - 2
1 F. ERASE Ⓛ P2801 - 1
TO SERVO
SP Ⓗ / LP Ⓜ SW
S. TRACK VR ⊕
S. TRACK VR ⊖
TRACKING VR
SERVO SSS Ⓛ
CUE / REV Ⓗ
CAP ON/OFF/RESET
X7 Ⓗ
CTL PLS
CURRENT EMPHA Ⓛ
DUTY CHANGE Ⓛ
STOP/FF/REW Ⓛ
TO AUDIO
SIMUL Ⓗ
SSS Ⓛ
AUDIO MODE SEL
A. MUT Ⓗ
A. EE Ⓗ
TUNER Ⓗ
E. REC Ⓛ
AGC Ⓗ
D. A. REC 12V
X2 Ⓗ
A. DUB Ⓗ
FM.R. MUT
INSERT Ⓛ
TO LUMINANCE & CHROMINANCE
LINE Ⓗ
EDIT Ⓗ
PICTURE CTL
E. REC Ⓛ
TUNER Ⓗ
LINE INPUT Ⓛ
EE Ⓗ
V EE Ⓛ
D. REC 12V
AFTER REC Ⓛ
AV Ⓗ
X2 Ⓗ
AGC Ⓗ
P6006 (TO LUMI. & CHRO. SEP.)
1 FM.R. MUT Ⓛ P3801-1
2 REC Ⓗ P3801-2
3 FM.R. MUT P3801-3
4 REC TRG P3801-4
5 D. REC 12V P3801-5
6 F. ERASE P3801-6
TO CH SELECT
INSERT Ⓗ
A. DUB LED Ⓗ

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen.
DC voltages tol. ± 15% measured with digital voltmeter against ⊥.

Spannungstabelle der Systemsteuerungs-Transistoren
System Control Transistors Voltage Chart (S-VHS Standard Play)

REF. NO.	Q6007			Q6008			Q6009			Q6011			Q6015			Q6016		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.4	15.1	14.5
PLAY	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	10.4	14.9	11.5
REC	12.0	12.0	11.3	12.0	11.8	11.2	12.0	11.9	11.2	12.0	11.9	11.2	5.0	5.7	5.6	10.4	14.9	11.5
F.F	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.3	15.0	14.5
REW	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.3	15.0	14.5
REF. NO.	Q6017			Q6018			Q6019											
MODE	E	C	B	E	C	B	E	C	B									
STOP	13.4	13.4	4.9	0	13.4	0	0.7	13.4	0.6									
PLAY	10.4	10.4	2.1	0	10.4	0	0.7	10.4	0.7									
REC	10.4	10.4	2.0	0	10.4	0	0.7	10.4	0.7									
F.F	13.3	13.3	4.9	0	13.3	0	0.7	13.3	0.6									
REW	13.3	13.3	4.9	0	13.3	0	0.6	13.3	0.6									
REF. NO.	QR6001			QR6004			QR6005			QR6006			QR6008			QR6010		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	4.8	0.3	0	5.1	0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	0.6	4.9
PLAY	0	4.8	0.4	0	5.1	5.1	0	0	4.9	4.7	4.6	0.1	5.1	0	5.1	5.2	−0.4	5.0
REC	0	4.8	0.3	0	5.1	5.1	0	12.0	0.2	4.8	4.7	0.2	5.1	0	5.1	5.1	−0.3	4.9
F.F	0	4.8	0.3	0	3.0	2.0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	−0.1	4.9
REW	0	4.8	0.2	0	3.0	2.0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	−0.1	4.9
REF. NO.	QR6011			QR6012			QR6013			QR6014			QR6015			QR6016		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	3.4	0.6	4.8	0.6	4.2	0	0.6	0	0	12.1	0	0	5.0	1.0	5.1	−0.2	4.9
PLAY	0	0.1	3.8	4.7	0.7	4.2	0	3.8	0	0	12.1	0	0	5.1	1.0	5.1	0.4	5.0
REC	0	0.1	3.8	4.8	0.7	4.2	0	3.7	0	0	0.1	4.0	0	5.1	0.3	5.1	−0.1	4.9
F.F	0	3.4	0.7	4.8	0.6	4.2	0	0.7	0	0	12.1	0	0	5.0	1.0	5.1	−0.2	4.9
REW	0	3.4	0.7	4.8	0.6	4.2	0	0.7	0	0	12.1	0	0	5.0	1.0	5.1	0.2	4.9
REF. NO.	QR6199																	
MODE	E	C	B															
STOP	0.1	0.6	0															
PLAY	0.1	3.8	0															
REC	0.2	3.8	0															
F.F	0.1	0.7	0															
REW	0.1	0.7	0															

Spannungstabelle der Systemsteuerungs-IC's
System Control IC's Voltage Chart (S-VHS Standard Play)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	4.2	4.4	0	4.9	4.1	4.9	5.0	4.7	0.3	4.8	5.1	2.9	3.2	3.2	0.5
PLAY	0	0	4.9	0	0	4.2	4.4	0	5.0	4.0	5.0	5.1	4.7	0.3	4.8	5.1	2.9	3.2	3.2	0.5
REC	0	0	4.8	0	0	4.3	4.3	0	4.9	3.9	4.9	5.0	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5
F.F	0	0	4.7	0	0	4.2	4.4	0	4.9	4.0	4.9	4.9	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5
REW	0	0	4.7	0	0	4.2	4.4	0	4.9	4.0	4.9	4.9	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	2.0	2.0	0	2.0	5.1	4.8	0	0	4.8	4.7	4.9	4.8	4.8	0	0	4.9	4.9	4.9	12.0
PLAY	0	2.0	2.0	0	5.1	0	4.9	2.4	3.5	0	4.7	4.9	4.8	4.8	5.0	0	5.0	5.0	5.0	12.0
REC	0	2.0	2.0	0	5.1	0	4.8	2.4	3.0	0	4.6	4.8	4.7	4.7	0.1	0.1	4.9	4.9	0.3	0.1
F.F	0	2.0	2.0	0	2.0	5.1	2.7	0	0.3	4.8	4.6	4.8	4.7	4.7	0	0	4.9	4.9	4.9	12.0
REW	0	2.0	2.0	0	2.0	5.1	2.6	0	2.5	4.8	4.6	4.9	4.7	4.7	0	0	4.9	4.9	4.9	12.0
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	12.1	1.0	1.9	0	0.1	4.9	4.9	0	0.1	4.9	5.1	0.1	0.1	0	4.6	0.2	4.2	0	4.9	0
PLAY	12.1	1.0	5.0	0	0.1	0	5.0	5.0	0.1	5.0	5.1	4.1	0.1	4.4	0	4.9	4.1	0.6	4.9	0
REC	0.3	0.3	4.9	0.1	0.1	0.1	4.9	4.9	0.2	4.9	5.1	4.0	4.4	4.5	4.7	0.2	4.2	0	4.9	0
F.F	12.1	1.0	4.9	0	0.1	0	5.0	4.9	0.1	4.9	5.1	0.1	0.1	0	4.6	0.2	4.2	0	4.9	0
REW	12.1	1.0	4.9	0	0.1	0	5.0	0	0.1	5.0	5.1	0.1	0.1	0	4.6	0.2	4.2	3.8	4.9	0
REF. NO.	IC6001										IC6002									
MODE	61	62	63	64							1	2	3	4	5	6	7	8		
STOP	4.9	2.1	2.3	4.9							4.8	0.2	2.7	0	0	0.4	0	5.1		
PLAY	5.0	2.1	2.3	5.0							4.9	4.7	2.7	0	0	0.4	0	5.2		
REC	4.9	2.0	2.2	4.9							4.8	4.7	2.7	0	0	0.4	0	5.1		
F.F	4.9	2.1	2.2	4.9							2.6	2.3	2.5	0	0	0.4	0	5.1		
REW	4.9	2.1	2.2	4.9							2.6	2.3	2.5	0	0	0.4	0	5.1		
REF. NO.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	5.1	0	0	4.9	0	–	0	0	0	0	0	0	0	0.4	5.1				
PLAY	0	0	0	0	0	5.2	–	0	0	5.0	5.2	0	0	5.1	0.4	5.2				
REC	0	0	0	0	0.1	5.1	–	0	0	4.9	5.1	0	0	5.1	2.9	5.1				
F.F	0	1.0	0	0	0	2.5	–	0	0	4.9	2.0	0	0	2.0	1.0	5.1				
REW	0	1.0	0	0	0	2.5	–	0	0	0	2.0	0	0	2.0	1.1	5.1				
REF. NO.	IC6004																			
MODE	1	2	3																	
STOP	5.1	5.1	0																	
PLAY	5.1	5.1	0																	
REC	5.1	5.1	0																	
F.F	5.1	5.1	0																	
REW	5.1	5.1	0																	

Spannungstabelle der Systemsteuerungs-Transistoren
System Control Transistors Voltage Chart (S-VHS Long Play)

REF. NO.	Q6007			Q6008			Q6009			Q6011			Q6015			Q6016		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.3	15.1	14.5
PLAY	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	10.4	14.9	11.5
REC	12.1	12.1	11.3	12.1	11.8	11.2	12.1	11.9	11.2	12.1	11.9	11.2	5.0	5.7	5.6	10.4	14.9	11.5
F.F	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.3	15.0	14.5
REW	12.1	12.1	11.4	12.1	0.3	12.1	12.1	0	12.1	12.1	0	12.1	5.0	5.7	5.6	13.3	15.0	14.5

REF. NO.	Q6017			Q6018			Q6019		
MODE	E	C	B	E	C	B	E	C	B
STOP	13.3	13.3	4.9	0	13.3	0	0.7	13.3	0.7
PLAY	10.4	10.4	2.1	0	10.4	0	0.7	10.4	0.7
REC	10.4	10.4	2.1	0	10.4	0	0.7	10.4	0.7
F.F	13.3	13.3	4.9	0	13.3	0	0.7	13.3	0.7
REW	13.3	13.3	4.9	0	13.3	0	0.7	13.3	0.7

REF. NO.	QR6001			QR6004			QR6005			QR6006			QR6008			QR6010		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	4.8	0.3	0	5.1	0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	0.6	4.9
PLAY	0	4.8	0.4	0	5.1	5.1	0	0	4.9	4.7	4.6	0.1	5.1	0	5.1	5.2	−0.4	5.0
REC	0	4.8	0.3	0	5.1	5.1	0	12.0	0.2	4.8	4.7	0.2	5.1	0	5.1	5.1	−0.3	4.9
F.F	0	4.8	0.3	0	3.0	2.0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	−0.1	4.9
REW	0	4.8	0.2	0	3.0	2.0	0	12.1	0.2	4.8	4.7	0.1	5.1	0	5.1	5.1	−0.1	4.9

REF. NO.	QR6011			QR6012			QR6013			QR6014			QR6015			QR6016		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	3.4	0.6	4.8	0.6	4.2	0	0.6	0	0	12.1	0	0	5.0	1.0	5.1	−0.2	4.9
PLAY	0	0.1	3.8	4.7	0.7	4.2	0	3.8	0	0	12.1	0	0	5.1	1.0	5.1	0.4	5.0
REC	0	0.1	3.8	4.8	0.7	4.2	0	3.7	0	0	0.1	4.0	0	5.1	0.3	5.1	−0.1	4.9
F.F	0	3.4	0.7	4.8	0.6	4.2	0	0.7	0	0	12.1	0	0	5.0	1.0	5.1	−0.2	4.9
REW	0	3.4	0.7	4.8	0.6	4.2	0	0.7	0	0	12.1	0	0	5.0	1.0	5.1	0.2	4.9

REF. NO.	QR6199		
MODE	E	C	B
STOP	0.1	0.6	0
PLAY	0.1	3.8	0
REC	0.2	3.8	0
F.F	0.1	0.7	0
REW	0.1	0.7	0

Spannungstabelle der Systemsteuerungs-IC's
System Control IC's Voltage Chart (S-VHS Long Play)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	4.2	4.4	0	4.9	4.1	4.9	5.0	4.7	0.3	4.8	5.1	2.9	3.2	3.2	0.5
PLAY	0	0	4.9	0	0	4.2	4.4	0	5.0	4.0	5.0	5.1	4.7	0.3	4.8	5.1	2.9	3.2	3.2	0.5
REC	0	0	4.8	0	0	4.3	4.3	0	4.9	3.9	4.9	5.0	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5
F.F	0	0	4.7	0	0	4.2	4.4	0	4.9	4.0	4.9	4.9	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5
REW	0	0	4.7	0	0	4.2	4.4	0	4.9	4.0	4.9	4.9	4.6	0.3	4.8	5.1	2.9	3.2	3.2	0.5

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	2.0	2.0	4.5	2.0	5.1	4.8	0	0	4.8	4.7	4.9	4.8	4.8	0	0	4.9	4.9	4.9	12.0
PLAY	0	2.0	2.0	4.5	5.1	0	4.9	2.4	3.5	0	4.7	4.9	4.8	4.8	5.0	0	5.0	5.0	5.0	12.0
REC	0	2.0	2.0	4.5	5.1	0	4.8	2.4	3.0	0	4.6	4.8	4.7	4.7	0.1	0.1	4.9	4.9	0.3	0.1
F.F	0	2.0	2.0	4.5	2.0	5.1	2.7	0	0.3	4.8	4.6	4.8	4.7	4.7	0	0	4.9	4.9	4.9	12.0
REW	0	2.0	2.0	4.5	2.0	5.1	2.6	0	2.5	4.8	4.6	4.9	4.7	4.7	0	0	4.9	4.9	4.9	12.0

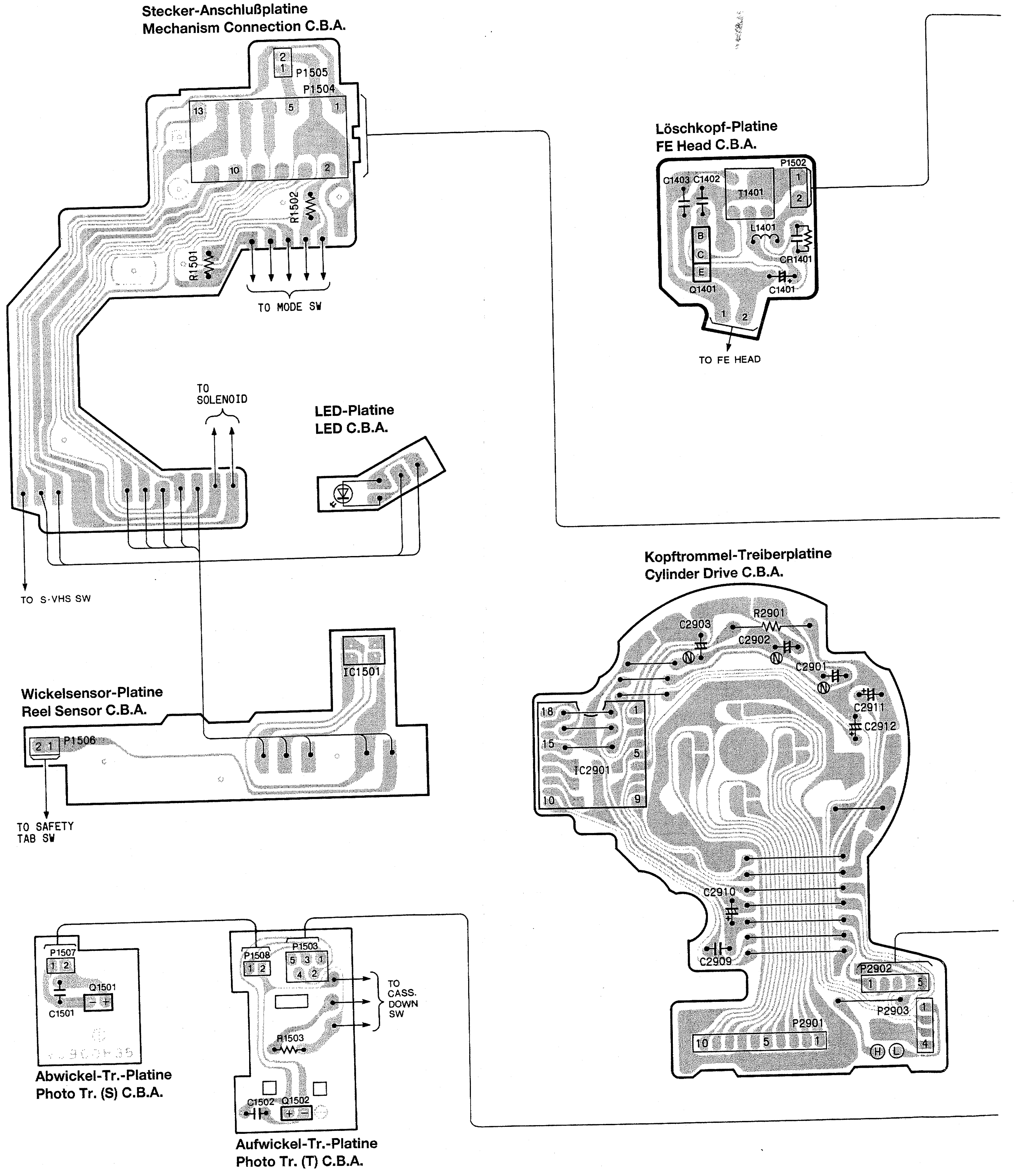
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	12.1	1.0	1.9	0	0.1	4.9	4.9	0	0.1	4.9	5.1	0.1	0.1	0	4.6	0.2	4.2	0	4.9	0
PLAY	12.1	1.0	5.0	0	0.1	0	5.0	5.0	0.1	5.0	5.1	4.1	0.1	4.4	0	4.9	4.1	0.6	4.9	0
REC	0.3	0.3	4.9	0.1	0.1	0.1	4.9	4.9	0.2	4.9	5.1	4.0	4.4	4.5	4.7	0.2	4.2	0	4.9	0
F.F	12.1	1.0	4.9	0	0.1	0	5.0	4.9	0.1	4.9	5.1	0.1	0.1	0	4.6	0.2	4.2	0	4.9	0
REW	12.1	1.0	4.9	0	0.1	0	5.0	0	0.1	5.0	5.1	0.1	0.1	0	4.6	0.2	4.2	3.8	4.9	0

REF. NO.	IC6001										IC6002									
MODE	61	62	63	64							1	2	3	4	5	6	7	8		
STOP	4.9	2.1	2.3	4.9							4.8	0.2	2.7	0	0	0.4	0	5.1		
PLAY	5.0	2.1	2.3	5.0							4.9	4.7	2.7	0	0	0.4	0	5.2		
REC	4.9	2.0	2.2	4.9							4.8	4.7	2.7	0	0	0.4	0	5.1		
F.F	4.9	2.1	2.2	4.9							2.6	2.3	2.5	0	0	0.4	0	5.1		
REW	4.9	2.1	2.2	4.9							2.6	2.3	2.5	0	0	0.4	0	5.1		

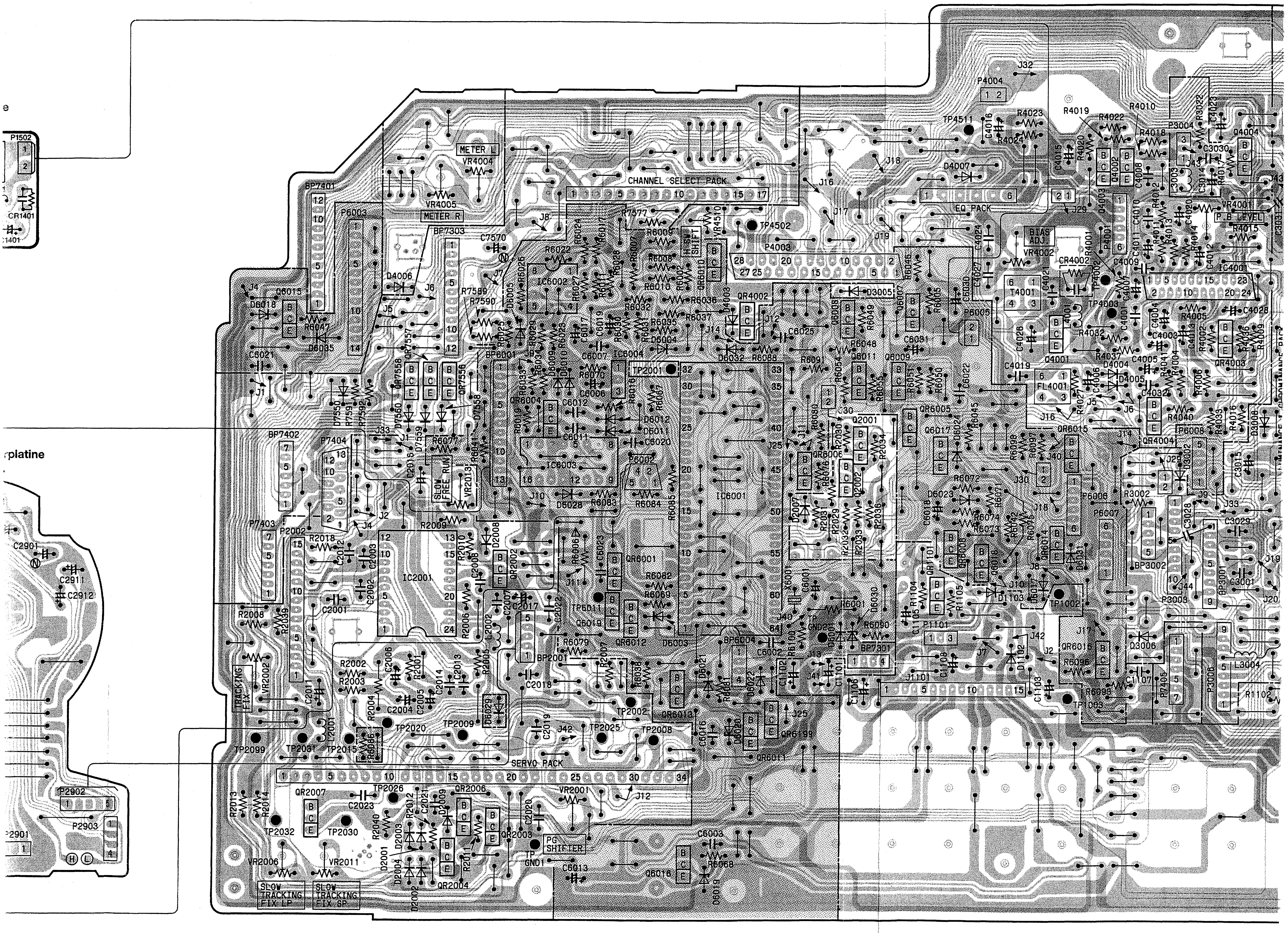
REF. NO.	IC6003															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	0	5.1	0	0	4.9	0	–	0	0	0	0	0	0	0	0.4	5.1
PLAY	0	0	0	0	0	5.2	–	0	0	5.0	5.2	0	0	5.1	0.4	5.2
REC	0	0	0	0	0.1	5.1	–	0	0	4.9	5.1	0	0	5.1	2.9	5.1
F.F	0	1.0	0	0	0	2.5	–	0	0	4.9	2.0	0	0	2.0	1.0	5.1
REW	0	1.0	0	0	0	2.5	–	0	0	0	2.0	0	0	2.0	1.1	5.1

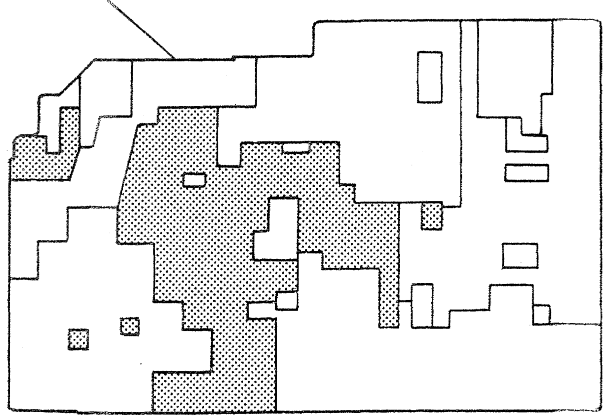
REF. NO.	IC6004		
MODE	1	2	3
STOP	5.1	5.1	0
PLAY	5.1	5.1	0
REC	5.1	5.1	0
F.F	5.1	5.1	0
REW	5.1	5.1	0

Systemsteuerungsteil auf der Hauptplatine
System Control Section on Main C.B.A.

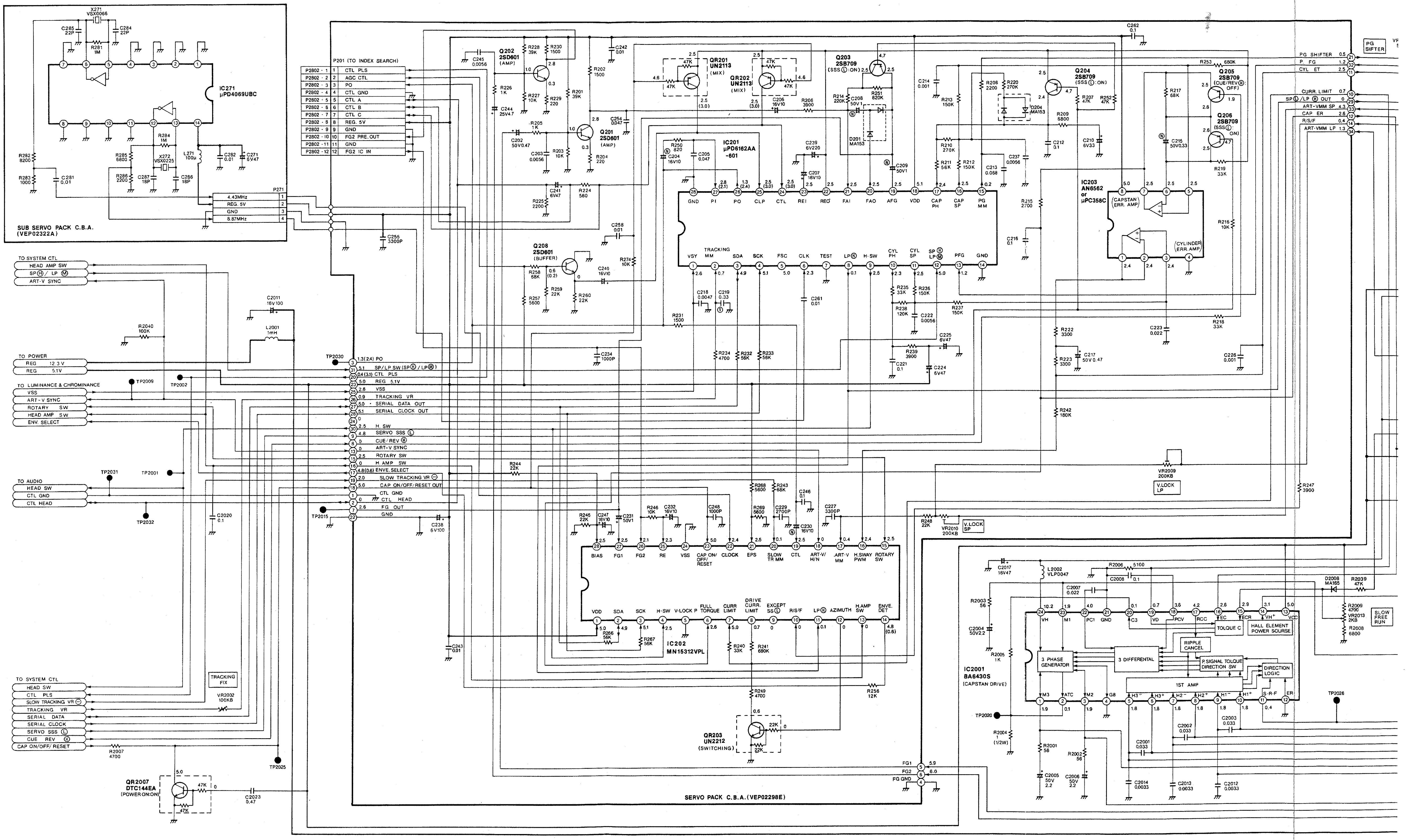

Stecker-Anschlußplatine
Mechanism Connection C.B.A.
P1505
P1504
R1502
R1501
TO MODE SW
Löschkopf-Platine
FE Head C.B.A.
P1502
C1403
C1402
T1401
L1401
CR1401
Q1401
C1401
TO FE HEAD
TO SOLENOID
LED-Platine
LED C.B.A.
TO S-VHS SW
IC1501
Wickelsensor-Platine
Reel Sensor C.B.A.
P1506
TO SAFETY TAB SW
Kopftrommel-Treiberplatine
Cylinder Drive C.B.A.
R2901
C2903
C2902
C2901
C2911
C2912
IC2901
C2910
C2909
P2902
P2903
P2901
P1507
Q1501
C1501
Abwickel-Tr.-Platine
Photo Tr. (S) C.B.A.
P1508
P1503
TO CASS. DOWN SW
R1503
C1502
Q1502
Aufwickel-Tr.-Platine
Photo Tr. (T) C.B.A.

Systemsteuerungsteil auf der Hauptplatine
System Control Section on Main C.B.A.


CHANNEL SELECT PACK
EQ PACK
SERVO PACK
METER L
METER R
VR4004
VR4005
BIAS ADJ.
VR4002
P.B LEVEL
VR4001
SLOW FREE RUN
VR2013
TRACKING FIX
VR2002
SLOW TRACKING FIX LP
VR2006
SLOW TRACKING FIX SP
VR2011
PG SHIFTER
VR2001
IC6001
IC6002
IC6003
IC6004
IC2001
IC4001
T4001
FL4001
TP2001
TP4502
TP4511
TP4003
TP1002
TP1003
TP2002
TP2008
TP2009
TP2015
TP2020
TP2025
TP2026
TP2030
TP2031
TP2032
TP2099
TP6011
P4003
P4004
P6003
P6005
P6006
P6007
P6008
P7403
P7404
P1101
P1502
P2902
P2903
P2901
P3003
P3004
P3006
BP7401
BP7402
BP7303
BP6001
BP6004
BP2001
BP7301
BP3001
BP3002
J1101
L3004
C2901
C2911
C2912
CR1401

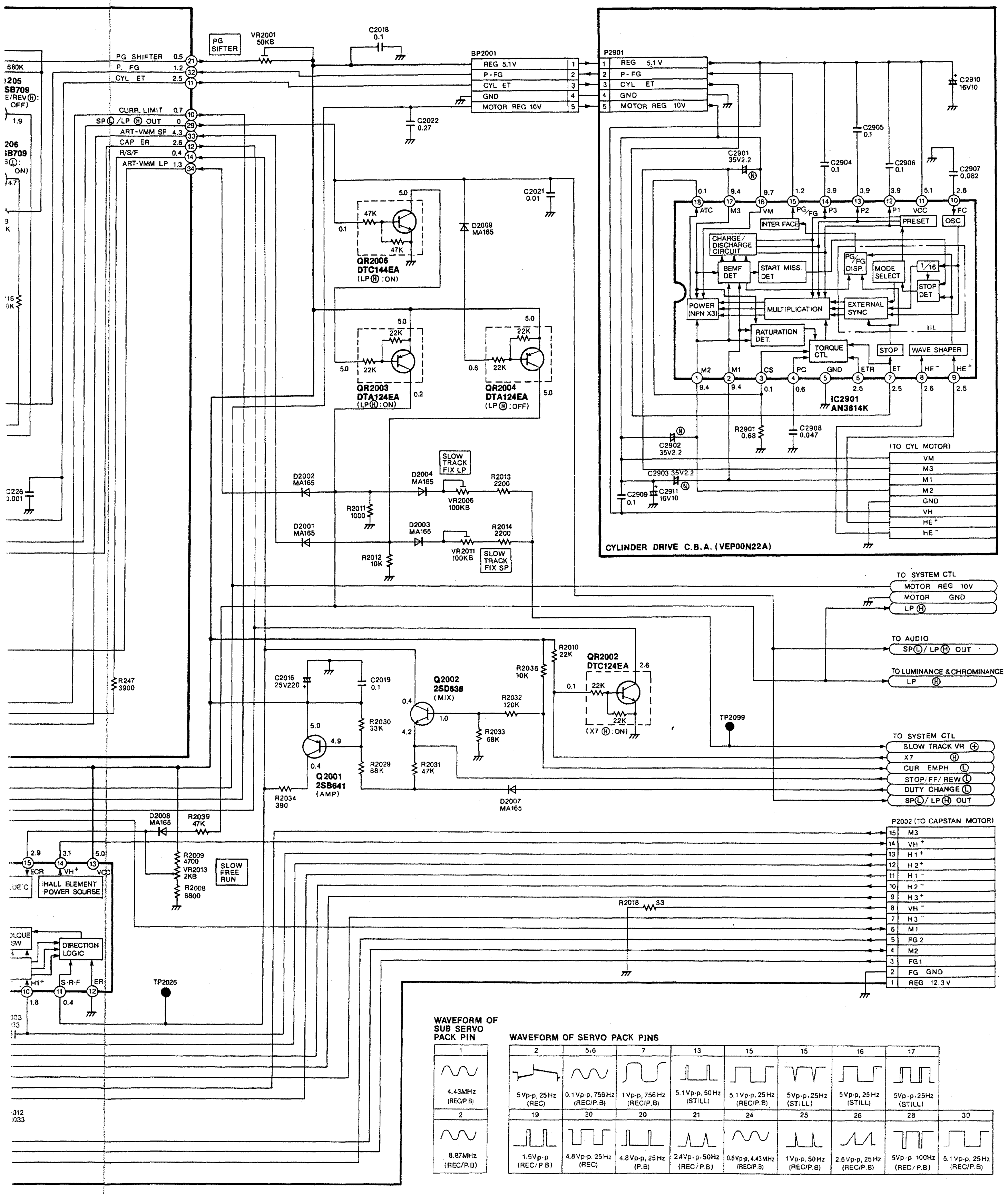


Schaltbild Servoteil
Servo Schematic Diagram


X271 VSX0066
IC271 µPD4069UBC
X272 VSX0225
L271 100µ
SUB SERVO PACK C.B.A. (VEP02322A)
P271
4.43MHz
REG. 5V
GND
8.87MHz
P201 (TO INDEX SEARCH)
CTL PLS
AGC CTL
PO
CTL GND
CTL A
CTL B
CTL C
REG. 5V
GND
FG2 PRE. OUT
GND
FG2 IC IN
Q202 2SD601 (AMP)
Q201 2SD601 (AMP)
Q208 2SD601 (BUFFER)
QR201 UN2113 (MIX)
QR202 UN2113 (MIX)
Q203 2SB709 (SSS Ⓛ:ON)
Q204 2SB709 (SSS Ⓛ:ON)
Q205 2SB709 (CUE/REV Ⓡ: OFF)
Q206 2SB709 (SSS Ⓛ ON)
D201 MA153
D204 MA153
IC201 µPD6162AA -601
GND
PI
PO
CLP
CTL
REI
REO
FAI
FAO
AFG
VDD
CAP PH
CAP SP
PG MM
VSY
TRACKING MM
SDA
SCK
FSC
CLK
TEST
LP Ⓗ
H·SW
CYL PH
CYL SP
SP Ⓗ LP Ⓜ
PFG
GND
IC203 AN6562 or µPC358C
(CAPSTAN) (ERR. AMP)
(CYLINDER) (ERR. AMP)
PG SIFTER
PG SHIFTER
P FG
CYL ET
CURR. LIMIT
SP Ⓛ/LP Ⓗ OUT
ART-VMM SP
CAP ER
R/S/F
ART-VMM LP
TO SYSTEM CTL
HEAD AMP SW
SP Ⓗ / LP Ⓜ
ART-V SYNC
TO POWER
REG 12.3 V
REG 5.1V
TO LUMINANCE & CHROMINANCE
VSS
ART-V SYNC
ROTARY SW
HEAD AMP SW
ENV. SELECT
TO AUDIO
HEAD SW
CTL GND
CTL HEAD
TP2030
TP2009
TP2002
TP2031
TP2001
TP2032
TP2015
TP2025
TP2020
TP2026
PO
SP/LP SW (SP Ⓗ / LP Ⓜ)
CTL PLS
REG 5.1V
VSS
TRACKING VR
SERIAL DATA OUT
SERIAL CLOCK OUT
H. SW
SERVO SSS Ⓛ
CUE/REV Ⓗ
ART-V SYNC
ROTARY SW
H. AMP SW
ENVE. SELECT
SLOW TRACKING VR ⊖
CAP ON/OFF/RESET OUT
CTL GND
CTL HEAD
FG OUT
GND
IC202 MN15312VPL
BIAS
FG1
FG2
RE
VSS
CAP ON/ OFF/ RESET
CLOCK
EPS
SLOW TR MM
CTL
ART-V/ H/N
ART-V MM
H.SWAY PWM
ROTARY SW
VDD
SDA
SCK
H·SW
V-LOCK P
FULL TORQUE
CURR LIMIT
DRIVE CURR. LIMIT
EXCEPT SSS Ⓛ
R/S/F
LP Ⓗ
AZIMUTH
H.AMP SW
ENVE. DET
QR203 UN2212 (SWITCHING)
TO SYSTEM CTL
HEAD SW
CTL PLS
SLOW TRACKING VR ⊖
TRACKING VR
SERIAL DATA
SERIAL CLOCK
SERVO SSS Ⓛ
CUE REV Ⓗ
CAP ON/OFF/ RESET
TRACKING FIX
VR2002 100KB
QR2007 DTC144EA (POWER ON:ON)
VR2009 200KB
V.LOCK LP
VR2010 200KB
V.LOCK SP
IC2001 BA6430S (CAPSTAN DRIVE)
3 PHASE GENERATOR
3 DIFFERENTAL
TOLQUE C
HALL ELEMENT POWER SOURSE
RIPPLE CANCEL
P SIGNAL TOLQUE DIRECTION SW
DIRECTION LOGIC
1ST AMP
SLOW FREE RUN
D2008 MA165
L2002 VLP0047
L2001 1mH
FG1
FG2
FG GND
SERVO PACK C.B.A. (VEP02298E)

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

Schaltbild Servoteil
Servo Schematic Diagram

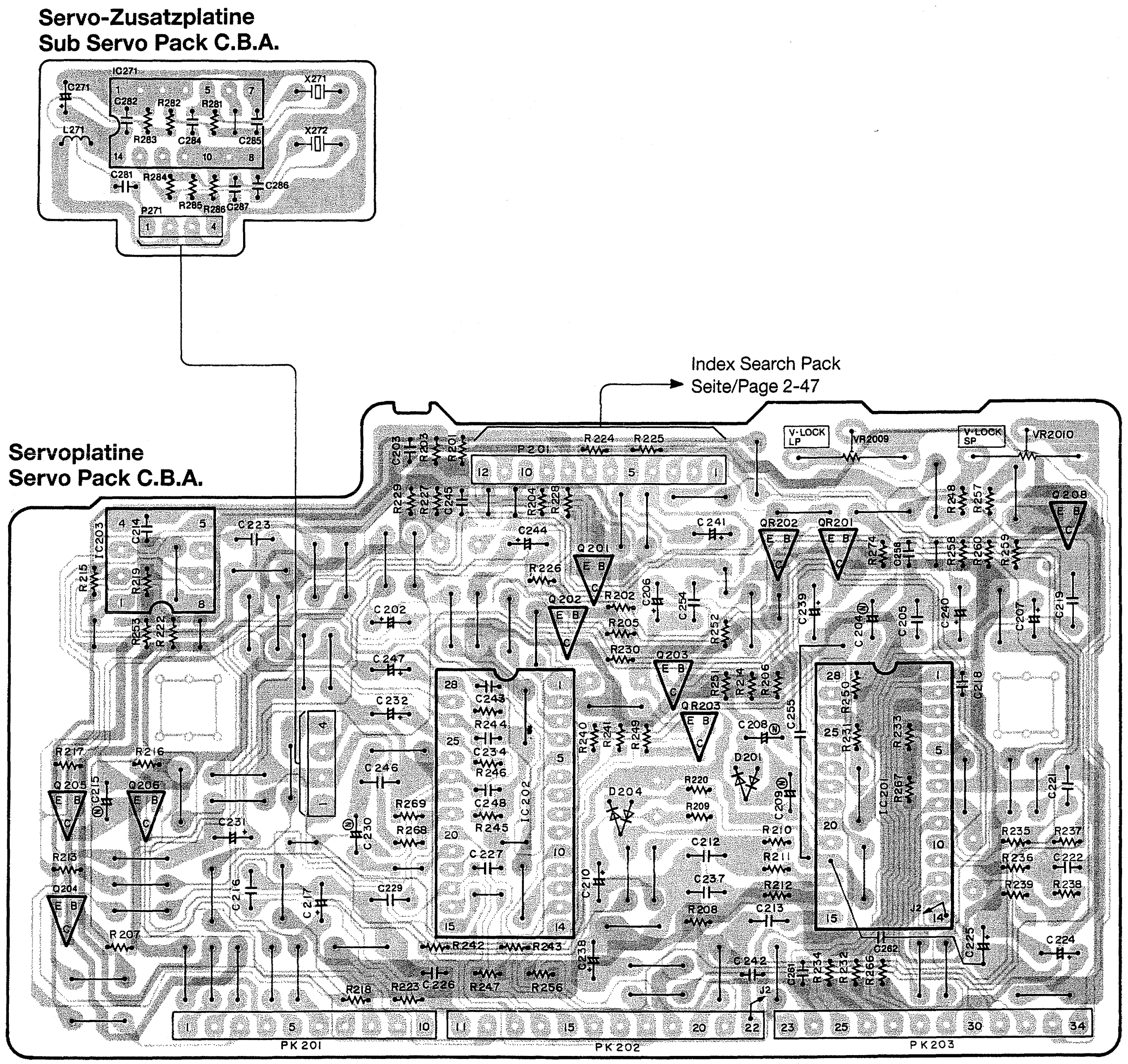

PG SIFTER
VR2001 50KB
C2018 0.1
PG SHIFTER 0.5 21
P. FG 1.2 32
CYL ET 2.5 11
CURR. LIMIT 0.7 10
SP Ⓛ/LP Ⓗ OUT 0 29
ART-VMM SP 4.3 33
CAP ER 2.6 12
R/S/F 0.4 14
ART-VMM LP 1.3 34
C2022 0.27
BP2001
REG 5.1V
P-FG
CYL ET
GND
MOTOR REG 10V
P2901
REG 5.1 V
P - FG
CYL ET
GND
MOTOR REG 10V
C2910 16V10
C2905 0.1
C2901 35V2.2
C2904 0.1
C2906 0.1
C2907 0.082
ATC
M3
VM
PG/FG
P3
P2
P1
VCC
FC
INTER FACE
PRESET
OSC
CHARGE/DISCHARGE CIRCUIT
BEMF DET
START MISS DET
PG/FG DISP.
MODE SELECT
1/16
STOP DET
POWER (NPN X3)
MULTIPLICATION
EXTERNAL SYNC
RATURATION DET.
TORQUE CTL
STOP
WAVE SHAPER
M2
M1
CS
PC
GND
ETR
ET
HE⁻
HE⁺
IC2901 AN3814K
R2901 0.68
C2908 0.047
C2902 35V2.2
C2903 35V2.2
C2909 0.1
C2911 16V10
(TO CYL MOTOR)
VM
M3
M1
M2
GND
VH
HE⁺
HE⁻
CYLINDER DRIVE C.B.A. (VEP00N22A)
C2021 0.01
D2009 MA165
QR2006 DTC144EA (LP Ⓗ:ON)
QR2003 DTA124EA (LP Ⓗ:ON)
QR2004 DTA124EA (LP Ⓗ:OFF)
SLOW TRACK FIX LP
SLOW TRACK FIX SP
D2002 MA165
D2004 MA165
R2013 2200
VR2006 100KB
R2011 1000
D2001 MA165
D2003 MA165
R2014 2200
VR2011 100KB
R2012 10K
TO SYSTEM CTL
MOTOR REG 10V
MOTOR GND
LP Ⓗ
TO AUDIO
SPⓁ/LPⒽ OUT
TO LUMINANCE & CHROMINANCE
LP Ⓗ
R247 3900
C2016 25V220
C2019 0.1
R2030 33K
Q2002 2SD638 (MIX)
R2010 22K
QR2002 DTC124EA
R2038 10K
R2032 120K
R2033 68K
(X7 Ⓗ:ON)
TP2099
Q2001 2SB641 (AMP)
R2029 68K
R2031 47K
R2034 390
D2007 MA165
TO SYSTEM CTL
SLOW TRACK VR ⊕
X7 Ⓗ
CUR EMPH Ⓛ
STOP/FF/REW Ⓛ
DUTY CHANGE Ⓛ
SPⓁ/LPⒽ OUT
D2008 MA165
R2039 47K
R2009 4700
VR2013 2KB
R2008 6800
SLOW FREE RUN
ECR
VH⁺
VCC
HALL ELEMENT POWER SOURSE
DIRECTION LOGIC
S-R-F
TP2026
R2018 33
P2002 (TO CAPSTAN MOTOR)
15 M3
14 VH⁺
13 H1⁺
12 H2⁺
11 H1⁻
10 H2⁻
9 H3⁺
8 VH⁻
7 H3⁻
6 M1
5 FG2
4 M2
3 FG1
2 FG GND
1 REG 12.3V
WAVEFORM OF SUB SERVO PACK PIN
WAVEFORM OF SERVO PACK PINS

WAVEFORM OF SUB SERVO PACK PIN	
1	4.43MHz (REC/P.B)
2	8.87MHz (REC/P.B)

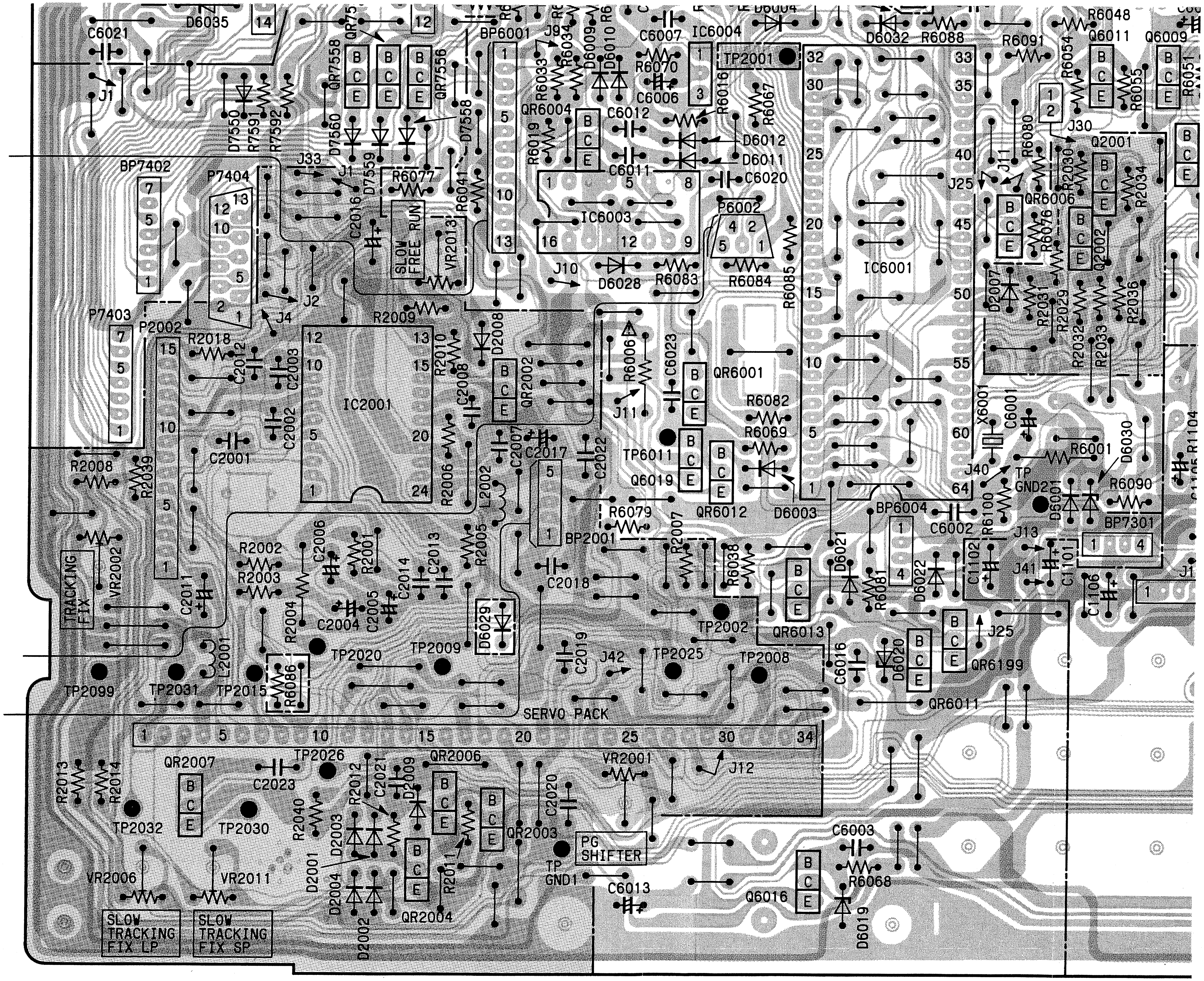
WAVEFORM OF SERVO PACK PINS	
2	5Vp-p, 25Hz (REC)
5,6	0.1Vp-p, 756Hz (REC/P.B)
7	1Vp-p, 756Hz (REC/P.B)
13	5.1Vp-p, 50Hz (STILL)
15	5.1Vp-p, 25Hz (REC/P.B)
15	5Vp-p, 25Hz (STILL)
16	5Vp-p, 25Hz (STILL)
17	5Vp-p, 25Hz (STILL)
19	1.5Vp-p (REC/P.B)
20	4.8Vp-p, 25Hz (REC)
20	4.8Vp-p, 25Hz (P.B)
21	2.4Vp-p, 50Hz (REC/P.B)
24	0.6Vp-p, 4.43MHz (REC/P.B)
25	1Vp-p, 50Hz (REC/P.B)
26	2.5Vp-p, 25Hz (REC/P.B)
28	5Vp-p 100Hz (REC/P.B)
30	5.1Vp-p, 25Hz (REC/P.B)

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F(μF) or Ω respectively unless otherwise noted.

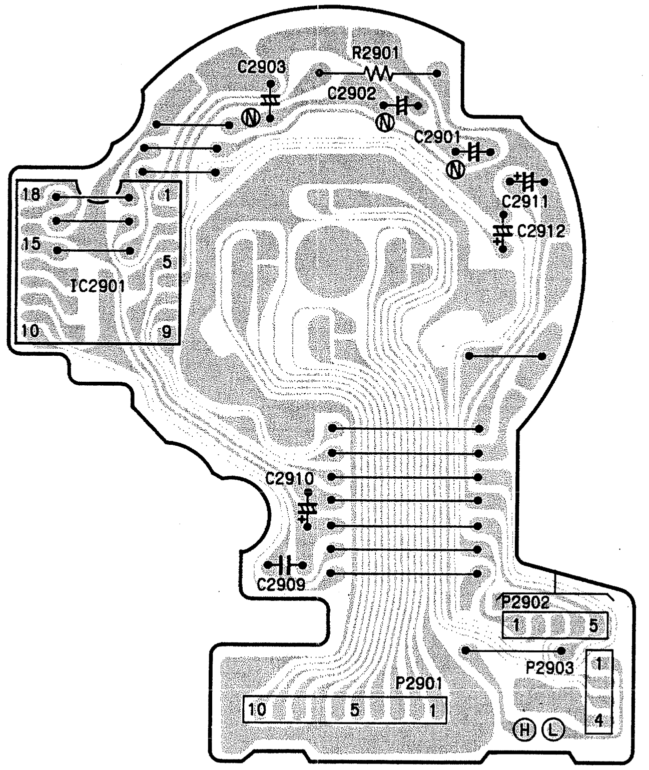
Servo-Platinen
Servo Circuit Boards


Servo-Zusatzplatine
Sub Servo Pack C.B.A.
IC271
C271
L271
C282
R282
R281
R283
C284
C285
X271
X272
C281
R284
R285
R286
C287
C286
P271
Index Search Pack
Seite/Page 2-47
Servoplatine
Servo Pack C.B.A.
P201
R224
R225
V-LOCK LP
VR2009
V-LOCK SP
VR2010
IC203
C223
C244
Q201
R226
Q202
R205
R230
Q203
QR203
QR202
QR201
Q208
C241
C202
C247
C232
C246
R269
R268
C230
C231
C216
C217
C229
IC202
C243
R244
C234
R246
C248
R245
C227
R240
R241
R249
D204
R220
R209
C212
C237
R208
C213
R210
R211
R212
D201
C208
C209
IC201
C204
C205
C240
C207
C219
C218
C221
R235
R237
R236
C222
R239
R238
C224
C225
C262
J2
R217
R216
Q205
Q206
R213
Q204
R207
R218
R223
C226
R247
R256
R242
R243
C242
R215
R219
R222
R233
R251
R206
R252
R250
R231
R287
R233
R234
R232
R266
PK201
PK202
PK203

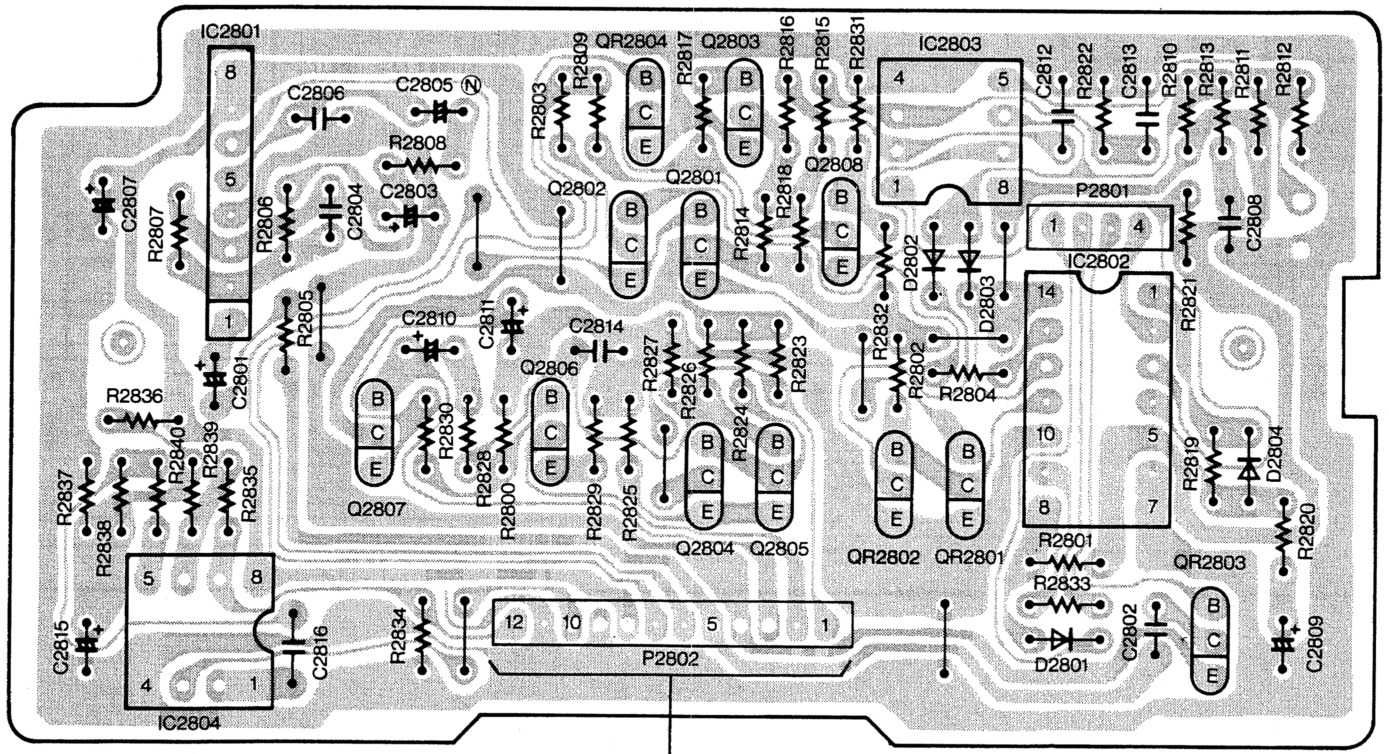
Servoteil auf der Hauptplatine
Servo Section on Main C.B.A.


D6035
C6021
J1
D7550
R7591
R7592
QR7558
QR7556
D7560
D7559
D7558
J33
BP7402
P7404
P7403
P2002
C2016
R6077
SLOW FREE RUN
VR2013
R6041
BP6001
J9
R6033
R6034
D6009
D6010
C6007
IC6004
R6070
C6006
C6012
R6019
QR6004
C6011
IC6003
R6016
R6067
D6012
D6011
C6020
TP2001
P6002
J10
D6028
R6083
R6084
R6085
IC6001
D6032
R6088
R6091
R6048
Q6011
Q6009
R6054
R6055
R6051
J30
Q2001
R6080
J11
R2030
R2034
J25
QR6006
R6076
Q2002
D2007
R2031
R2029
R2036
R2032
R2033
R2035
J2
J4
R2009
R2018
C2012
C2003
C2002
C2001
IC2001
R2010
D2008
C2008
QR2002
R6006
C6023
QR6001
R6082
R6069
J11
TP6011
Q6019
QR6012
D6003
X6001
C6001
R6001
D6030
R1104
J40
TP GND2
R6100
D6001
R6090
BP7301
BP6004
C6002
J13
J41
C1102
C1101
C1106
R2008
R2039
R2006
L2002
C2007
C2017
C2022
R6079
BP2001
R2007
R6038
D6021
R6081
D6022
TRACKING FIX
VR2002
C2011
R2002
R2003
C2006
R2001
C2013
C2014
R2005
C2018
C2005
C2004
R2004
D6029
L2001
R6086
TP2020
TP2009
C2019
J42
TP2025
TP2002
QR6013
TP2008
C6016
D6020
QR6199
J25
QR6011
TP2099
TP2031
TP2015
SERVO PACK
QR2007
C2023
TP2026
R2012
C2021
D2009
QR2006
VR2001
J12
R2013
R2014
TP2032
TP2030
R2040
D2003
D2001
D2004
D2002
QR2004
R2011
QR2003
C2020
PG SHIFTER
TP GND1
C6013
C6003
R6068
Q6016
D6019
VR2006
VR2011
SLOW TRACKING FIX LP
SLOW TRACKING FIX SP

Kopftrommel-Treiberplatine
Cylinder Drive C.B.A.

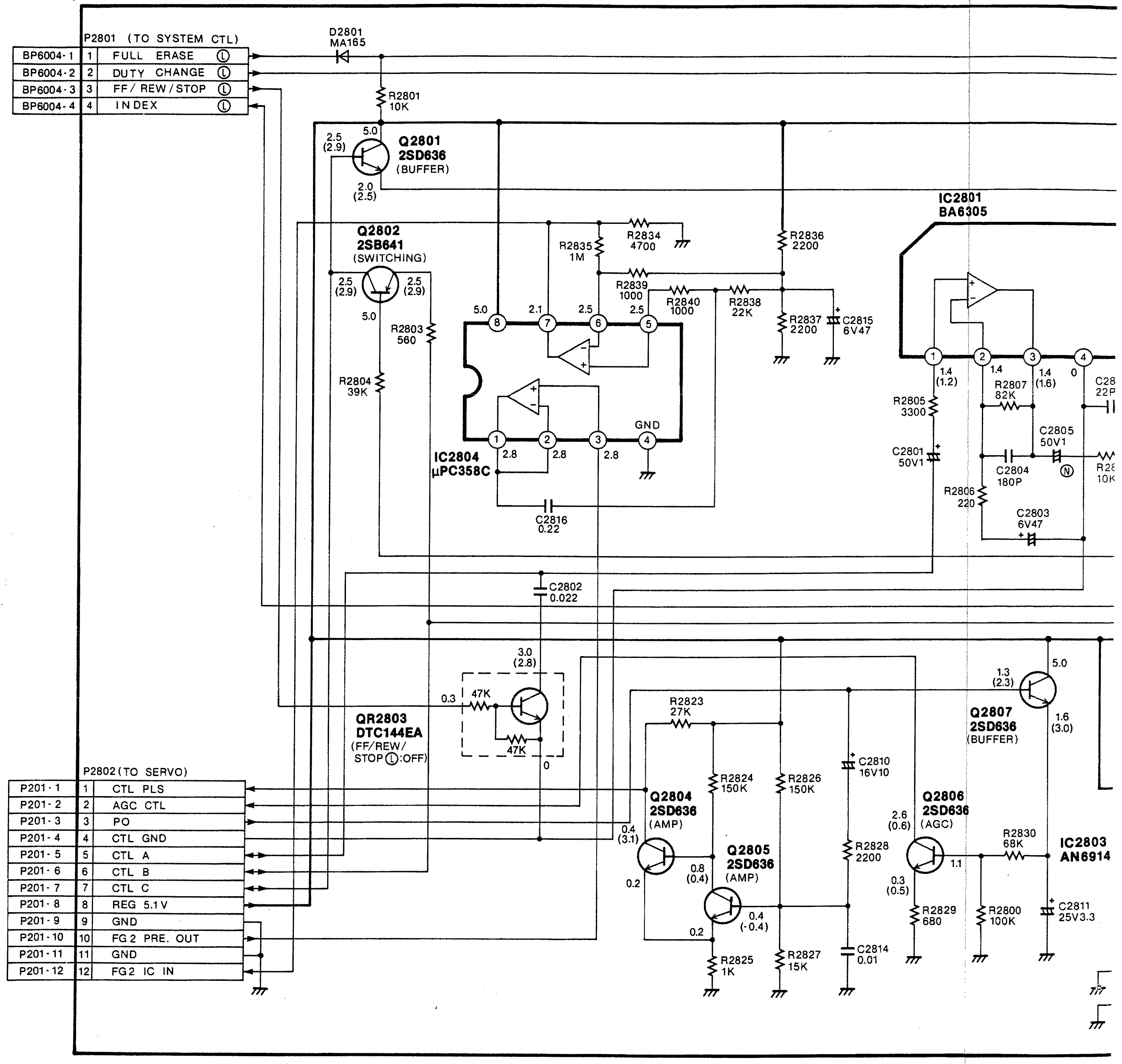

C2903
R2901
C2902
C2901
C2911
C2912
18
1
15
5
IC2901
10
9
C2910
C2909
P2902
1
5
P2903
1
4
P2901
10
5
1
H
L

Index-Suchlaufplatine
Index Search Pack C.B.A.


IC2801
C2806
C2805
R2808
C2803
C2807
R2807
R2806
C2804
R2805
C2801
C2810
C2811
C2814
R2836
R2837
R2838
R2840
R2839
R2835
Q2807
Q2806
R2830
R2828
R2800
R2829
R2825
R2827
R2826
R2824
R2823
Q2804
Q2805
R2803
R2809
QR2804
Q2803
R2817
Q2802
Q2801
R2814
R2818
Q2808
R2816
R2815
R2831
IC2803
D2802
D2803
R2832
R2802
R2804
QR2802
QR2801
C2812
R2822
C2813
R2810
R2813
R2811
R2812
P2801
IC2802
C2808
R2821
R2819
D2804
R2820
R2801
R2833
D2801
C2802
QR2803
C2809
C2815
IC2804
C2816
R2834
P2802
B
C
E

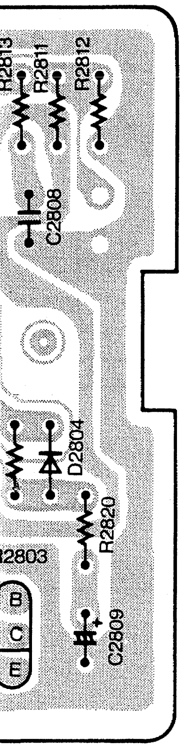
Servo Pack
Seite/Page 2-44

Schaltbild Index-Suchlauf
Index Search Schematic Diagram

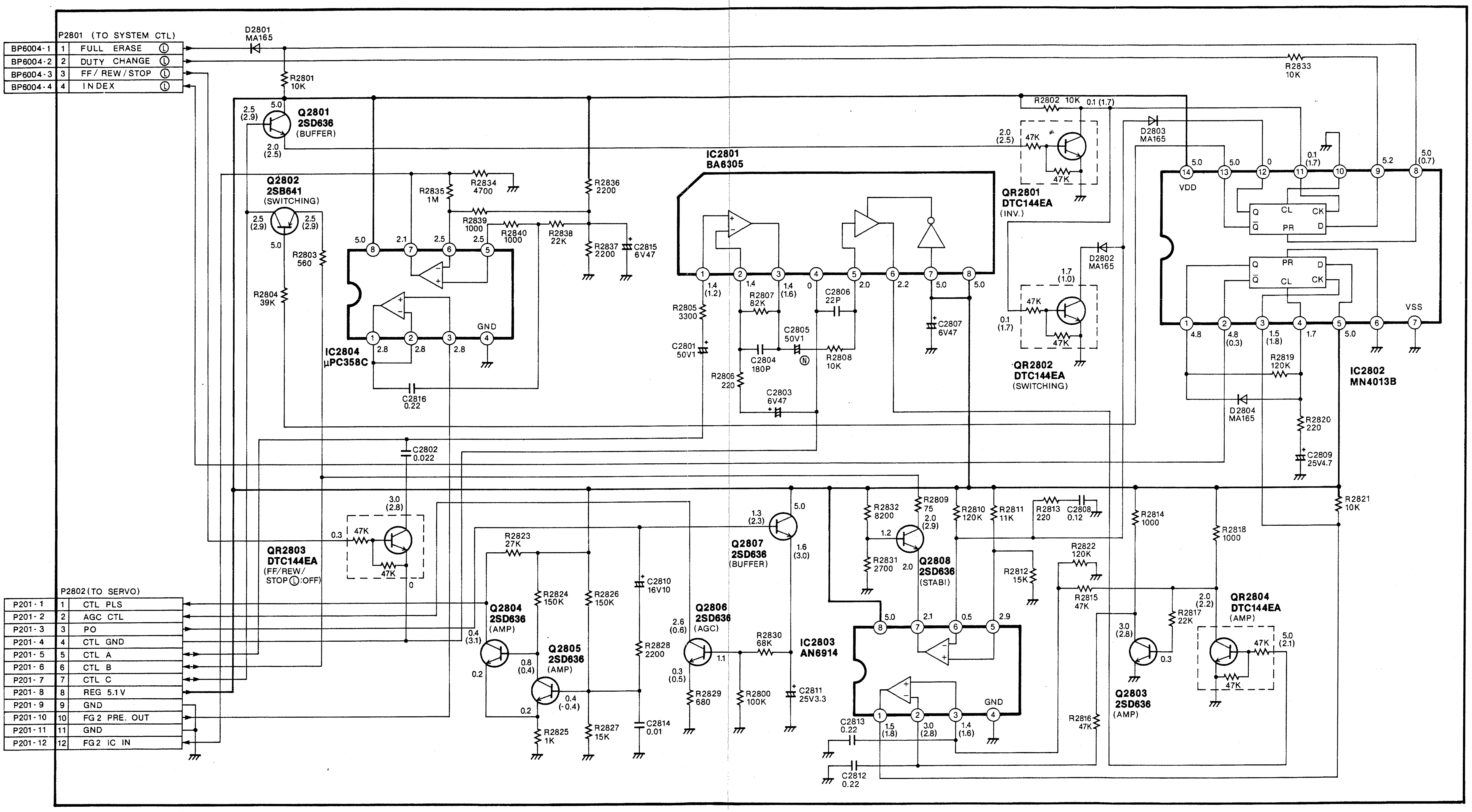

P2801 (TO SYSTEM CTL)
BP6004-1 1 FULL ERASE Ⓛ
BP6004-2 2 DUTY CHANGE Ⓛ
BP6004-3 3 FF/REW/STOP Ⓛ
BP6004-4 4 INDEX Ⓛ
D2801 MA165
R2801 10K
Q2801 2SD636 (BUFFER)
Q2802 2SB641 (SWITCHING)
R2803 560
R2804 39K
R2835 1M
R2834 4700
R2839 1000
R2840 1000
R2838 22K
R2836 2200
R2837 2200
C2815 6V47
IC2804 μPC358C
GND
C2816 0.22
C2802 0.022
IC2801 BA6305
R2805 3300
C2801 50V1
R2806 220
R2807 82K
C2804 180P
C2805 50V1
C2803 6V47
QR2803 DTC144EA (FF/REW/STOP Ⓛ:OFF)
47K
47K
P2802 (TO SERVO)
P201-1 1 CTL PLS
P201-2 2 AGC CTL
P201-3 3 PO
P201-4 4 CTL GND
P201-5 5 CTL A
P201-6 6 CTL B
P201-7 7 CTL C
P201-8 8 REG 5.1V
P201-9 9 GND
P201-10 10 FG2 PRE. OUT
P201-11 11 GND
P201-12 12 FG2 IC IN
R2823 27K
Q2804 2SD636 (AMP)
Q2805 2SD636 (AMP)
R2824 150K
R2826 150K
R2825 1K
R2827 15K
C2810 16V10
R2828 2200
C2814 0.01
Q2806 2SD636 (AGC)
R2829 680
R2830 68K
R2800 100K
C2811 25V3.3
Q2807 2SD636 (BUFFER)
IC2803 AN6914
2.5 (2.9)
5.0
2.0 (2.5)
1.4 (1.2)
1.4
1.4 (1.6)
2.8
3.0 (2.8)
0.3
0.4 (3.1)
0.2
0.8 (0.4)
0.4 (-0.4)
2.6 (0.6)
0.3 (0.5)
1.1
1.3 (2.3)
1.6 (3.0)

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", () ≙ Aufnahme.
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", () ≙ Record.

Schaltbild Index-Suchlauf
Index Search Schematic Diagram



R2813
R2811
R2812
C2808
D2804
R2820
2803
C2809
B
C
E

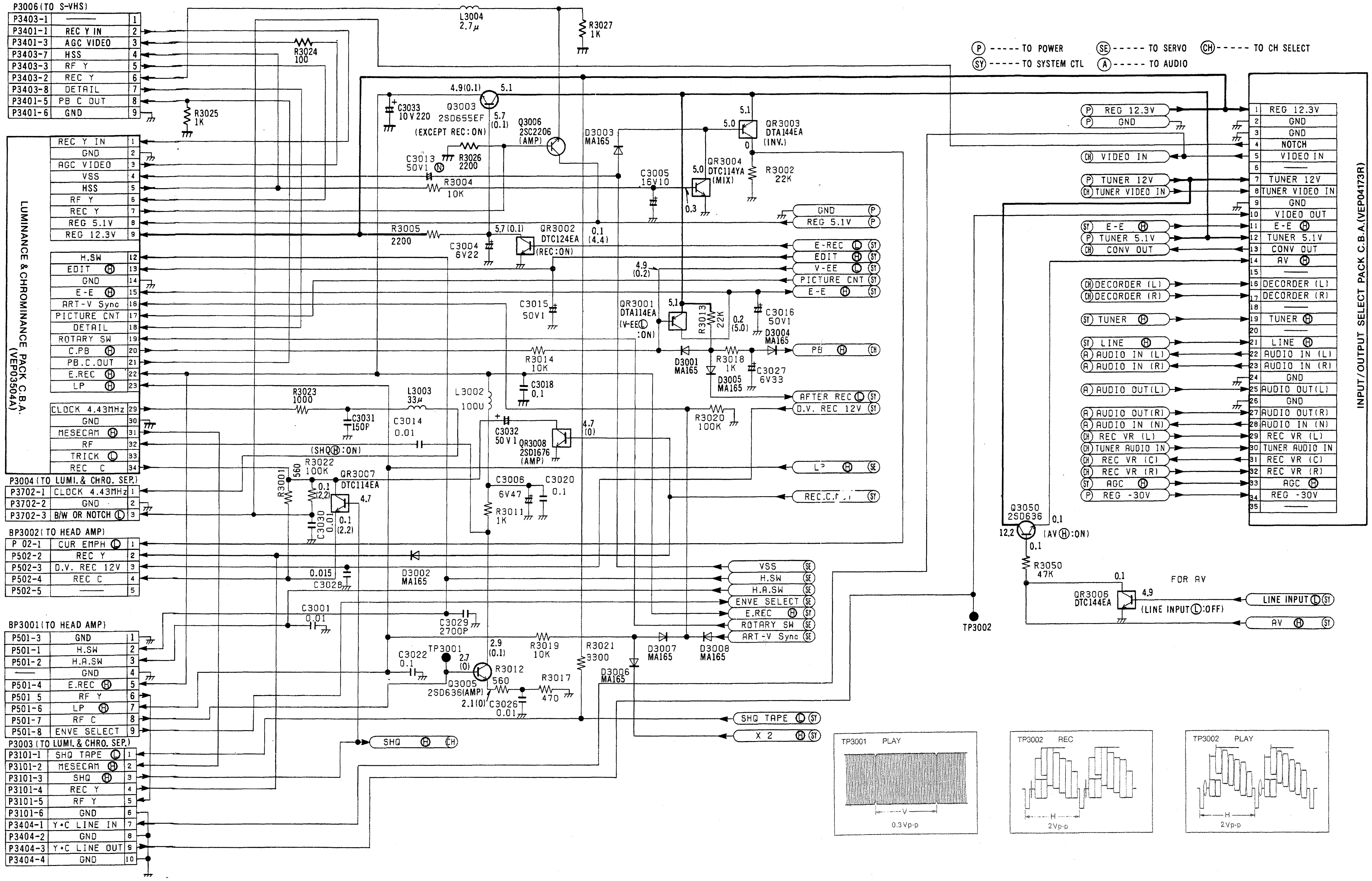


P2801 (TO SYSTEM CTL)
BP6004-1 | 1 | FULL ERASE Ⓛ
BP6004-2 | 2 | DUTY CHANGE Ⓛ
BP6004-3 | 3 | FF/REW/STOP Ⓛ
BP6004-4 | 4 | INDEX Ⓛ
D2801 MA165
R2801 10K
Q2801 2SD636 (BUFFER)
Q2802 2SB641 (SWITCHING)
R2803 560
R2804 39K
R2834 4700
R2835 1M
R2839 1000
R2840 1000
R2838 22K
R2836 2200
R2837 2200
C2815 6V47
IC2804 μPC358C
GND
C2816 0.22
C2802 0.022
QR2803 DTC144EA (FF/REW/STOP Ⓛ:OFF)
47K
IC2801 BA6305
R2805 3300
C2801 50V1
R2807 82K
C2806 22P
C2805 50V1
C2804 180P
R2808 10K
R2806 220
C2803 6V47
C2807 6V47
R2802 10K
QR2801 DTC144EA (INV.)
D2803 MA165
D2802 MA165
QR2802 DTC144EA (SWITCHING)
R2833 10K
IC2802 MN4013B
VDD
VSS
Q
Q̄
CL
CK
PR
D
R2819 120K
D2804 MA165
R2820 220
C2809 25V4.7
R2821 10K
P2802 (TO SERVO)
P201-1 | 1 | CTL PLS
P201-2 | 2 | AGC CTL
P201-3 | 3 | PO
P201-4 | 4 | CTL GND
P201-5 | 5 | CTL A
P201-6 | 6 | CTL B
P201-7 | 7 | CTL C
P201-8 | 8 | REG 5.1V
P201-9 | 9 | GND
P201-10 | 10 | FG2 PRE. OUT
P201-11 | 11 | GND
P201-12 | 12 | FG2 IC IN
R2823 27K
R2824 150K
R2826 150K
Q2804 2SD636 (AMP)
Q2805 2SD636 (AMP)
R2825 1K
R2827 15K
C2810 16V10
R2828 2200
C2814 0.01
Q2806 2SD636 (AGC)
R2829 680
R2830 68K
R2800 100K
C2811 25V3.3
Q2807 2SD636 (BUFFER)
IC2803 AN6914
R2832 8200
R2831 2700
R2809 75
Q2808 2SD636 (STABI)
R2810 120K
R2811 11K
R2813 220
C2808 0.12
R2812 15K
C2813 0.22
C2812 0.22
R2822 120K
R2815 47K
R2814 1000
R2818 1000
R2817 22K
R2816 47K
Q2803 2SD636 (AMP)
QR2804 DTC144EA (AMP)

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", () ≙ Aufnahme.
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", () ≙ Record.

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

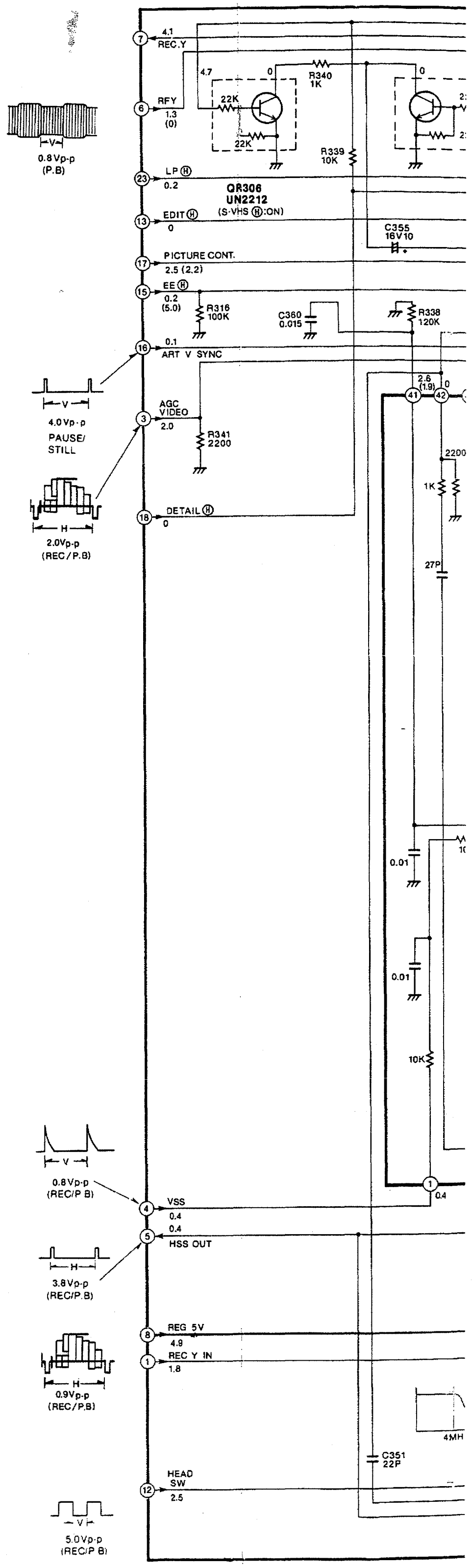
Schaltbild Luminanz- und Farbteil
Luminance and Chrominance Schematic Diagram


P3006 (TO S-VHS)
P3403-1
P3401-1 REC Y IN
P3401-3 AGC VIDEO
P3403-7 HSS
P3403-3 RF Y
P3403-2 REC Y
P3403-8 DETAIL
P3401-5 PB C OUT
P3401-6 GND
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504A)
REC Y IN
GND
AGC VIDEO
VSS
HSS
RF Y
REC Y
REG 5.1V
REG 12.3V
H.SW
EDIT Ⓗ
GND
E-E Ⓗ
ART-V Sync
PICTURE CNT
DETAIL
ROTARY SW
C.PB Ⓗ
PB.C.OUT
E.REC Ⓗ
LP Ⓗ
CLOCK 4.43MHz
GND
MESECAM Ⓗ
RF
TRICK Ⓛ
REC C
P3004 (TO LUMI. & CHRO. SEP.)
P3702-1 CLOCK 4.43MHz
P3702-2 GND
P3702-3 B/W OR NOTCH Ⓛ
BP3002 (TO HEAD AMP)
P502-1 CUR EMPH Ⓛ
P502-2 REC Y
P502-3 D.V. REC 12V
P502-4 REC C
P502-5
BP3001 (TO HEAD AMP)
P501-3 GND
P501-1 H.SW
P501-2 H.A.SW
GND
P501-4 E.REC Ⓗ
P501-5 RF Y
P501-6 LP Ⓗ
P501-7 RF C
P501-8 ENVE SELECT
P3003 (TO LUMI. & CHRO. SEP.)
P3101-1 SHQ TAPE Ⓛ
P3101-2 MESECAM Ⓗ
P3101-3 SHQ Ⓗ
P3101-4 REC Y
P3101-5 RF Y
P3101-6 GND
P3404-1 Y·C LINE IN
P3404-2 GND
P3404-3 Y·C LINE OUT
P3404-4 GND
L3004 2.7μ
R3027 1K
R3024 100
R3025 1K
4.9 (0.1)
5.1
C3033 10V220
Q3003 2SD655EF (EXCEPT REC:ON)
5.7 (0.1)
Q3006 2SC2206 (AMP)
C3013 50V1
R3026 2200
R3004 10K
D3003 MA165
C3005 16V10
QR3003 DTA144EA (INV.)
QR3004 DTC114YA (MIX)
R3002 22K
R3005 2200
C3004 6V22
QR3002 DTC124EA (REC:ON)
0.1 (4.4)
4.9 (0.2)
C3015 50V1
QR3001 DTA114EA (V-EEⓁ:ON)
R3013 22K
C3016 50V1
D3004 MA165
R3014 10K
C3018 0.1
D3001 MA165
R3018 1K
D3005 MA165
C3027 6V33
R3023 1000
C3031 150P
L3003 33μ
L3002 100U
C3014 0.01
C3032 50V1
QR3008 2SD1676 (AMP)
R3020 100K
(SHQⒽ:ON)
R3022 100K
QR3007 DTC114EA
R3001 560
C3030 0.01
C3006 6V47
C3020 0.1
R3011 1K
C3028 0.015
D3002 MA165
C3001 0.01
C3029 2700P
C3022 0.1
TP3001
Q3005 2SD636 (AMP)
R3012 560
R3019 10K
R3021 3300
R3017 470
C3026 0.01
D3006 MA165
D3007 MA165
D3008 MA165
GND Ⓟ
REG 5.1V Ⓟ
E-REC Ⓛ ST
EDIT Ⓗ ST
V-EE Ⓛ ST
PICTURE CNT ST
E-E Ⓗ ST
PB Ⓗ CH
AFTER REC Ⓛ ST
D.V. REC 12V ST
LP Ⓗ SE
REC.C.Ⓗ ST
VSS SE
H.SW SE
H.A.SW SE
ENVE SELECT SE
E.REC Ⓗ ST
ROTARY SW SE
ART-V Sync SE
SHQ TAPE Ⓛ ST
X 2 Ⓗ ST
SHQ Ⓗ CH
Ⓟ ----- TO POWER
SE ----- TO SERVO
CH ----- TO CH SELECT
SY ----- TO SYSTEM CTL
Ⓐ ----- TO AUDIO
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173R)
1 REG 12.3V
2 GND
3 GND
4 NOTCH
5 VIDEO IN
6
7 TUNER 12V
8 TUNER VIDEO IN
9 GND
10 VIDEO OUT
11 E-E Ⓗ
12 TUNER 5.1V
13 CONV OUT
14 AV Ⓗ
15
16 DECORDER (L)
17 DECORDER (R)
18
19 TUNER Ⓗ
20
21 LINE Ⓗ
22 AUDIO IN (L)
23 AUDIO IN (R)
24 GND
25 AUDIO OUT (L)
26 GND
27 AUDIO OUT (R)
28 AUDIO IN (N)
29 REC VR (L)
30 TUNER AUDIO IN
31 REC VR (C)
32 REC VR (R)
33 AGC Ⓗ
34 REG -30V
35
Ⓟ REG 12.3V
Ⓟ GND
CH VIDEO IN
Ⓟ TUNER 12V
CH TUNER VIDEO IN
ST E-E Ⓗ
Ⓟ TUNER 5.1V
CH CONV OUT
CH DECORDER (L)
CH DECORDER (R)
ST TUNER Ⓗ
ST LINE Ⓗ
Ⓐ AUDIO IN (L)
Ⓐ AUDIO IN (R)
Ⓐ AUDIO OUT (L)
Ⓐ AUDIO OUT (R)
Ⓐ AUDIO IN (N)
CH REC VR (L)
CH TUNER AUDIO IN
CH REC VR (C)
CH REC VR (R)
ST AGC Ⓗ
Ⓟ REG -30V
Q3050 2SD636
12.2
0.1
(AVⒽ:ON)
R3050 47K
FOR AV
QR3006 DTC144EA
4.9
(LINE INPUTⓁ:OFF)
LINE INPUT Ⓛ ST
AV Ⓗ ST
TP3002
TP3001 PLAY
0.3Vp-p
TP3002 REC
2Vp-p
TP3002 PLAY
2Vp-p

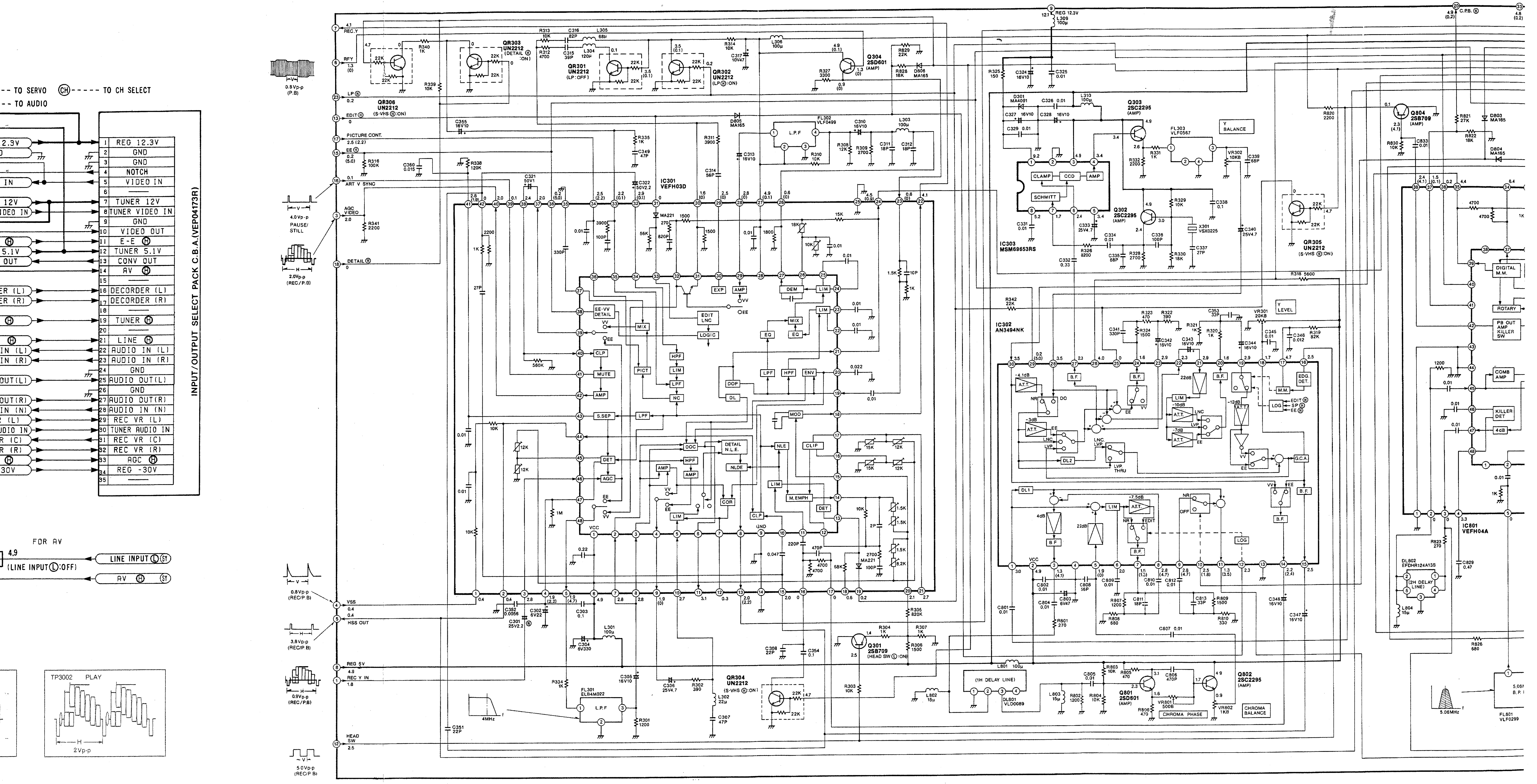
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe“, ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play“, ( )≙ Record (S-VHS : SP Mode).

Schaltbild
Luminance


REC.Y
RFY
LP
EDIT
PICTURE CONT.
EE
ART V SYNC
AGC VIDEO
DETAIL
QR306 UN2212
R340 1K
R339 10K
R316 100K
R341 2200
C355 16V10
C350 0.015
R338 120K
4.0Vp-p PAUSE/STILL
2.0Vp-p (REC/P.B)
0.8Vp-p (P.B)
0.8Vp-p (REC/P.B)
VSS
HSS OUT
3.8Vp-p (REC/P.B)
REG 5V
REC Y IN
0.9Vp-p (REC/P.B)
HEAD SW
5.0Vp-p (REC/P.B)
C351 22P

Schaltbild des Luminanz- und Farb-Zusatzteils
Luminance and Chrominance Pack Schematic Diagram



TO SERVO
TO CH SELECT
TO AUDIO
1 REG 12.3V
2 GND
3 GND
4 NOTCH
5 VIDEO IN
7 TUNER 12V
8 TUNER VIDEO IN
9 GND
10 VIDEO OUT
11 E-E Ⓗ
12 TUNER 5.1V
13 CONV OUT
14 AV Ⓗ
16 DECORDER (L)
17 DECORDER (R)
19 TUNER Ⓗ
21 LINE Ⓗ
22 AUDIO IN (L)
23 AUDIO IN (R)
24 GND
25 AUDIO OUT(L)
26 GND
27 AUDIO OUT(R)
28 AUDIO IN (N)
29 REC VR (L)
30 TUNER AUDIO IN
31 REC VR (C)
32 REC VR (R)
33 AGC Ⓗ
34 REG -30V
INPUT/OUTPUT SELECT PACK C.B.A.(VEP04173R)
FOR AV
LINE INPUT Ⓛ ST
(LINE INPUT Ⓛ:OFF)
AV Ⓗ ST
TP3002 PLAY
2Vp-p
REC.Y
RFY
LP Ⓢ
EDIT Ⓢ
PICTURE CONT.
EE Ⓢ
ART V SYNC
AGC VIDEO
PAUSE/STILL
DETAIL Ⓢ
VSS
HSS OUT
REG 5V
REC Y IN
HEAD SW
QR306 UN2212
QR303 UN2212
QR301 UN2212
QR302 UN2212
QR304 UN2212
Q304 2SD601
Q301 2SB709
IC301 VEFH03D
FL301 ELB4M022
FL302 VLF0499
4MHz
IC303 MSM69653RS
Q303 2SC2295
Q302 2SC2295
FL303 VLF0567
Y BALANCE
CLAMP
CCD
AMP
SCHMITT
IC302 AN3494NK
Y LEVEL
QR305 UN2212
Q804 2SB709
IC801 VEFH04A
DL801 VLD0089
(1H DELAY LINE)
Q801 2SD601
Q802 2SC2295
CHROMA PHASE
CHROMA BALANCE
DL802 EFDHR124A13S
FL801 VLF0299
5.06MHz
DIGITAL M.M.
ROTARY
PB OUT AMP KILLER SW
COMB AMP
KILLER DET
4dB

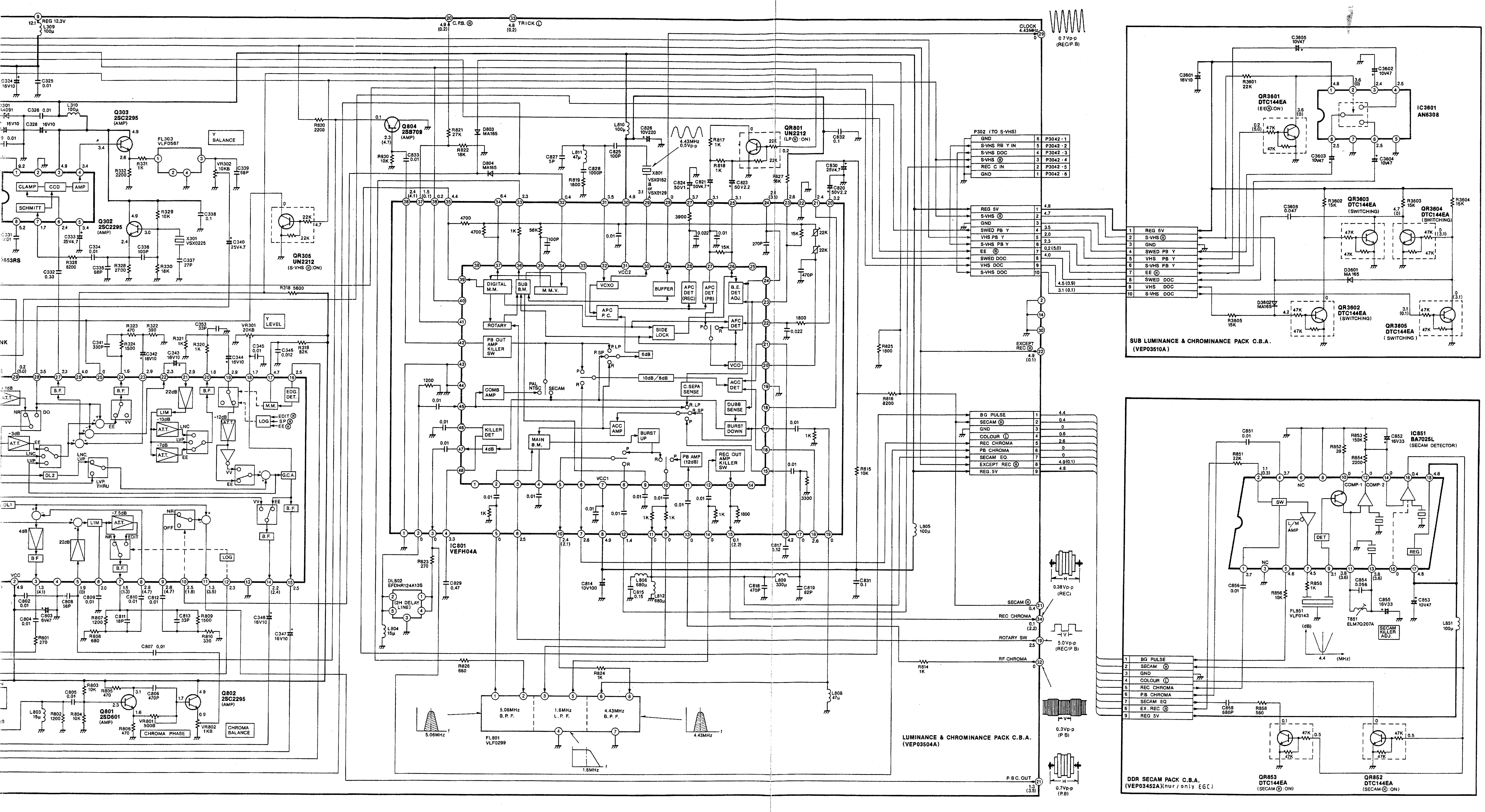
gen Tol ± 15% mit Digitalvoltmeter gegen ⊥

dergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).

. ± 15% measured with digital voltmeter

", ( )≙ Record (S-VHS : SP Mode).

Schaltbild des Luminanz- und Farb-Zusatzteils
Luminance and Chrominance Pack Schematic Diagram

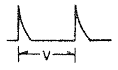
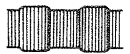
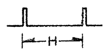
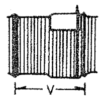
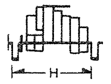
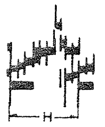
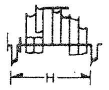
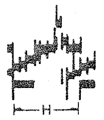
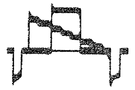
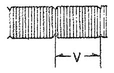
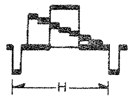
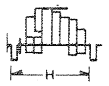
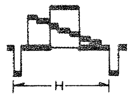
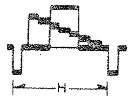
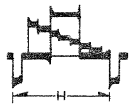
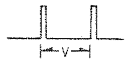
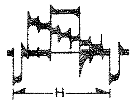
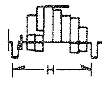
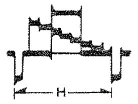
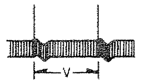


REG 12.3V
L309 100µ
C324 16V10
C325 0.01
Q303 2SC2295 (AMP)
FL303 VLF0587
Y BALANCE
VR302 10KB
C339 68P
CLAMP
CCD
AMP
SCHMITT
Q302 2SC2295 (AMP)
X301 VSX0225
C340 25V4.7
QR305 UN2212 (S-VHS Ⓓ:ON)
R318 5600
Y LEVEL
VR301 20KB
C.P.B. Ⓡ
TRICK Ⓛ
Q804 2SB709 (AMP)
R820 2200
R821 27K
D803 MA185
R822 18K
D804 MA165
R830 10K
C833 0.01
L810 100µ
C826 10V220
4.43MHz 0.5Vp-p
L811 47µ
C825 100P
C827 5P
C828 1000P
R819 1800
X801 VSX0162 B or VSX0129
C824 50V1
C821 50V4.7
C823 50V2.2
QR801 UN2212 (LP Ⓓ:ON)
R817 1K
R818 1K
R827 68K
C832 0.1
C830 25V4.7
C820 50V2.2
CLOCK 4.43MHz
0.7Vp-p (REC/P.B)
DIGITAL M.M.
SUB B.M.
M.M.V.
VCXO
BUFFER
APC DET (REC)
APC DET (PB)
B.E. DET ADJ.
APC P.C.
SIDE LOCK
AFC DET
ROTARY
PB OUT AMP KILLER SW
VCO
COMB AMP
PAL NTSC
SECAM
C.SEPA SENSE
ACC DET
DUBB SENSE
BURST DOWN
KILLER DET
ACC AMP
BURST UP
MAIN B.M.
PB AMP (12dB)
REC OUT AMP KILLER SW
6dB
10dB/6dB
4dB
VCC1
VCC2
IC801 VEFH04A
DL802 EFDHR124A13S (2H DELAY LINE)
L804 15µ
R823 270
C829 0.47
C814 10V100
L806 680µ
C815 0.15
L812 680µ
C818 470P
L809 330µ
C819 82P
C831 0.1
C817 0.12
L805 100µ
R825 1800
R816 8200
R815 10K
R814 1K
R826 680
R824 1K
L808 47µ
FL801 VLF0299
5.06MHz B.P.F.
1.6MHz L.P.F.
4.43MHz B.P.F.
5.06MHz
4.43MHz
1.6MHz
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03504A)
SECAM Ⓡ
REC CHROMA
ROTARY SW
RF CHROMA
P.B.C. OUT
EXCEPT REC Ⓡ
0.38Vp-p (REC)
5.0Vp-p (REC/P.B)
0.3Vp-p (P.B)
0.7Vp-p (P.B)
P302 (TO S-VHS)
GND
S-VHS PB Y IN
S-VHS DOC
S-VHS Ⓡ
REC C IN
P3042-1
P3042-2
P3042-3
P3042-4
P3042-5
P3042-6
REG 5V
S-VHS Ⓓ
SWED PB Y
VHS PB Y
S-VHS PB Y
EE Ⓡ
SWED DOC
VHS DOC
S-VHS DOC
BG PULSE
SECAM Ⓡ
COLOUR Ⓛ
REC CHROMA
PB CHROMA
SECAM EQ
EXCEPT REC Ⓡ
REG. 5V
C3605 10V47
C3601 16V10
R3601 22K
QR3601 DTC144EA (EE Ⓡ:ON)
C3602 10V47
C3603 10V47
C3604 10V47
IC3601 AN6308
C3606 0.047
R3602 15K
QR3603 DTC144EA (SWITCHING)
R3603 15K
QR3604 DTC144EA (SWITCHING)
R3604 15K
D3601 MA165
D3602 MA165
R3605 15K
QR3602 DTC144EA (SWITCHING)
QR3605 DTC144EA (SWITCHING)
SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03510A)
C851 0.01
R851 22K
R853 150K
C852 16V33
R852 39
R854 2200
IC851 BA7025L (SECAM DETECTOR)
SW
L/M AMP
DET
COMP-1
COMP-2
REG
C856 0.01
R856 10K
R855 1K
C854 0.056
C855 16V33
C853 10V47
FL851 VLF0143
T851 ELM7Q207A
SECAM KILLER ADJ.
L851 100µ
(dB)
4.4 (MHz)
BG PULSE
SECAM Ⓡ
GND
COLOUR Ⓛ
REC CHROMA
P.B CHROMA
SECAM EQ
EX. REC Ⓡ
REG 5V
C858 680P
R858 560
DDR SECAM PACK C.B.A. (VEP03452A)(nur / only EGC)
QR853 DTC144EA (SECAM Ⓡ:ON)
QR852 DTC144EA (SECAM Ⓓ:ON)
LIM
ATT.
LNC
LVP
NR
DO
EE
VV
EDG. DET.
M.M.
LOG
EDIT Ⓡ
SP Ⓡ
G.C.A
DL2
LVP. THRU
DL1
B.F.
-7.5dB
EDIT
OFF
Q801 2SD601 (AMP)
VR801 500B
CHROMA PHASE
Q802 2SC2295 (AMP)
VR802 1KB
CHROMA BALANCE
R803 10K
R805 470
C805 0.01
C806 470P
L803 15µ
R802 1200
R804 10K
R806 470
C807 0.01
R801 270
R808 680
R809 1500
R810 330
C347 16V10
C348 16V10

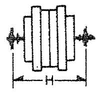
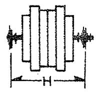
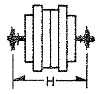
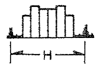
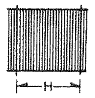
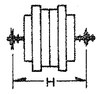
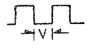
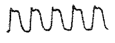
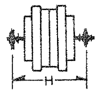
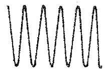
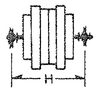
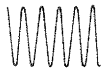
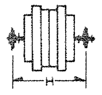
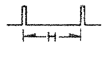
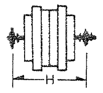
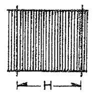
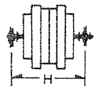
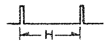
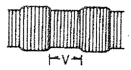
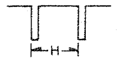
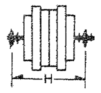
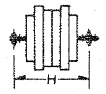
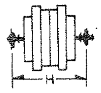
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

Oszillogramme der IC's 301 und 801
Signal Waveforms of the IC's 301 and 801

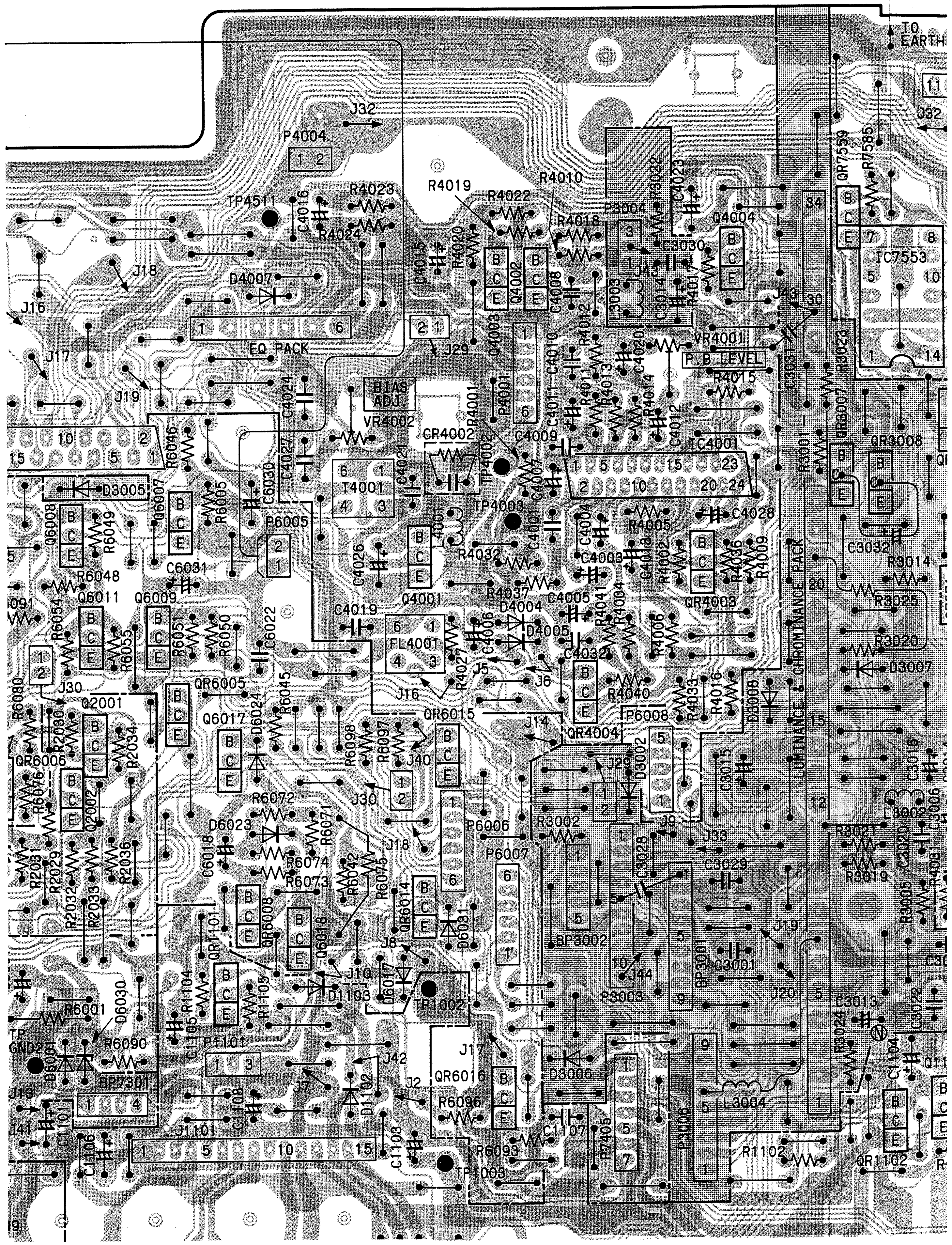
IC301 (VEFH03D)

PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
1	 0.8Vp-p (REC/P.B)	23	 1.0Vp-p (P.B)
2	 3.8Vp-p (REC/P.B)	26	 0.8Vp-p (P.B)
3	 0.9Vp-p (REC/P.B)	28	 0.7Vp-p (P.B)
5	 0.9Vp-p (REC)	30	 2.0Vp-p (P.B)
5	 1.4Vp-p (P.B)	33	 0.15Vp-p (P.B)
7, 8	 0.4Vp-p (REC) 0.66Vp-p (P.B)	37, 38	 0.8Vp-p (REC)
11	 0.27Vp-p (REC) 0.42Vp-p (P.B)	37, 38	 0.8Vp-p (P.B)
13	 0.8Vp-p (REC) 1.4Vp-p (P.B)	39	 4.0Vp-p (PAUSE/STILL)
15	 0.9Vp-p (REC/P.B)	40	 2.0Vp-p (REC/P.B)
17	 0.8Vp-p (REC/P.B)	41	 0.36Vp-p (REC/P.B)

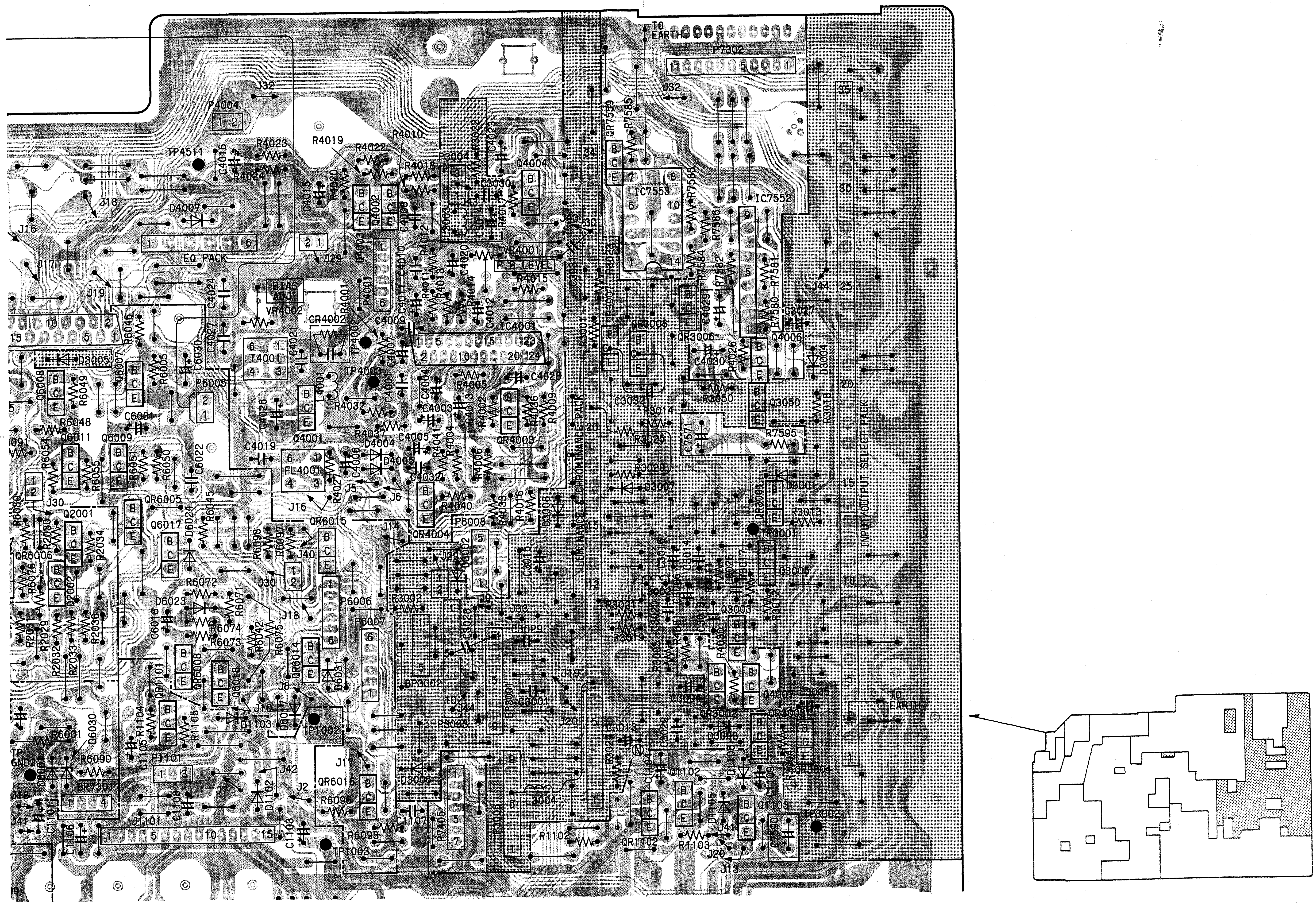
IC801 (VEFH04A)

PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
2	 0.1Vp-p (REC/P.B)	17	 0.33Vp-p (REC) 0.2Vp-p (P.B)
3	 0.5Vp-p (REC) 0.6Vp-p (P.B)	18	 1.0Vp-p (REC/P.B)
5	 0.18Vp-p (REC/P.B)	19	 0.15Vp-p (REC/P.B)
6	 5.0Vp-p (REC/P.B)	28	 0.7Vp-p (REC/P.B)
7	 0.5Vp-p (REC) 0.35Vp-p (P.B)	29	 1.0Vp-p (REC/P.B)
9	 0.45Vp-p (REC) 0.3Vp-p (P.B)	31	 0.7Vp-p (REC/P.B)
10	 0.4Vp-p (REC) 0.7Vp-p (P.B)	32	 4.0Vp-p (REC/P.B)
11	 0.3Vp-p (REC) 0.17Vp-p (P.B)	33	 0.62Vp-p (REC/P.B)
12	 0.4Vp-p (REC/P.B)	34	 5.0Vp-p (REC/P.B)
13	 0.25Vp-p (P.B)	35	 5.0Vp-p (REC/P.B)
14	 0.25Vp-p (REC) 0.18Vp-p (P.B)	38	 0.8Vp-p (P.B)
15	 0.38Vp-p (REC)		

Luminanz- und Farbteil auf der Hauptplatine
Luminance and Chrominance Section on Main C.B.A.


TO EARTH
J32
P4004
TP4511
C4016
R4023
R4024
R4019
R4022
R4010
R4018
P3004
R3022
C4023
Q4004
C3030
R4017
C3014
IC7553
QR7559
R7585
J18
D4007
J16
J17
EQ PACK
C4015
R4020
Q4002
C4008
Q4003
R4012
R4011
R4013
C4010
C4011
R4014
C4020
VR4001
P.B LEVEL
R4015
J29
J19
BIAS ADJ.
VR4002
C4024
C4027
R4001
P4001
CR4002
TP4002
C4009
C4012
IC4001
R3001
QR3007
QR3008
R6046
C6030
D3005
Q6008
Q6007
R6049
R6005
P6005
T4001
C4021
L4001
TP4003
C4007
C4001
C4004
C4013
C4003
R4005
C4028
R4002
R4036
R4009
QR4003
C3032
R3014
R3025
R6048
C6031
R4032
R4037
C4005
C4026
C4019
Q4001
D4004
D4005
R4041
R4004
R4006
Q6011
Q6009
R6054
R6055
R6051
R6050
C6022
FL4001
C4006
R4021
C4032
J5
J6
LUMINANCE & CHROMINANCE PACK
R3020
D3007
R6080
J30
Q2001
QR6005
Q6017
D6024
R6045
J16
QR6015
R4040
R4033
R4016
D3008
P6008
R2080
R2034
R6098
R6097
J40
J14
QR4004
J29
D3002
C3015
C3016
C3006
QR6006
R6076
Q2002
R6072
J30
P6006
R3002
J9
L3002
D6023
C6018
R6071
R6074
R6073
J18
P6007
C3028
J33
C3029
R3021
R3019
C3020
R4031
R2031
R2029
R2032
R2033
R2036
QR6008
QR1101
Q6018
R6042
R6075
QR6014
D6031
BP3002
J19
R3005
R1104
R1105
D1103
D6017
J8
J10
TP1002
J44
P3003
BP3001
C3001
J20
C3013
C3022
R3024
R6001
D6030
TP GND2
D6001
R6090
BP7301
C1105
P1101
J7
D1102
J42
J17
QR6016
R6096
D3006
L3004
C1104
QR1102
R1102
J13
J41
C1101
C1106
C1108
J1101
C1103
R6093
C1107
R7405
R3006
TP1003

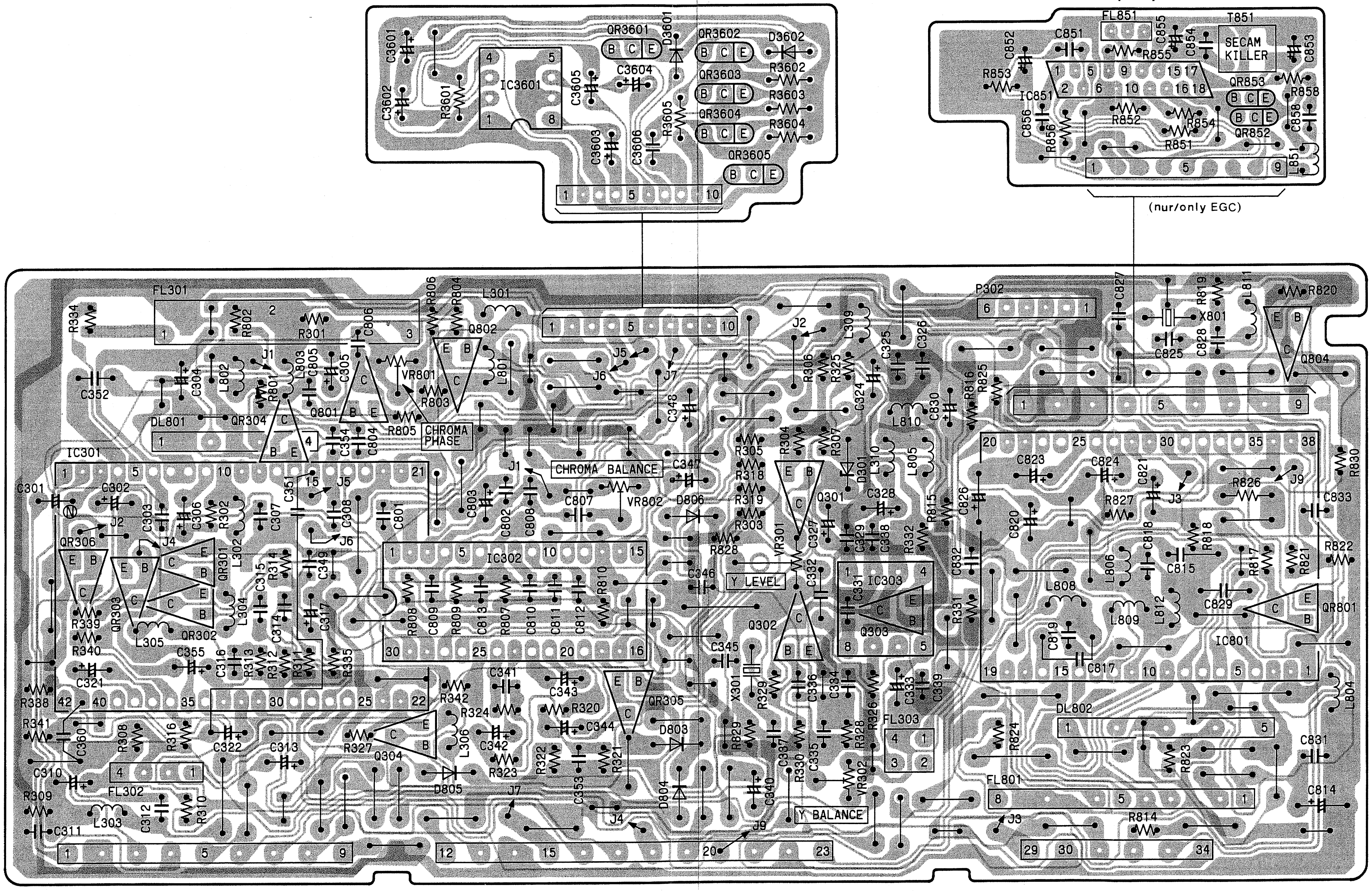
Luminanz- und Farbteil auf der Hauptplatine
Luminance and Chrominance Section on Main C.B.A.


TO EARTH
P7302
P4004
J32
TP4511
R4023
R4024
C4016
R4019
R4022
R4010
R4018
R4020
C4015
Q4002
Q4003
C4008
P3004
R3022
C4023
Q4004
C3030
J43
C3014
R4017
L3003
D4007
J18
J16
EQ PACK
J29
VR4001
P.B LEVEL
R4015
BIAS ADJ.
VR4002
CR4002
R4001
R4002
C4009
TP4002
IC4001
J17
J19
C4024
C4027
T4001
TP4003
C4001
C4004
R4005
C4028
R6046
R6005
C6030
D3005
Q6007
Q6008
R6049
P6005
C4026
Q4001
R4032
R4037
C4005
D4004
D4005
C4003
R4004
R4009
QR4003
C4013
R6048
R6054
Q6011
Q6009
C6031
R6051
R6050
C6022
C4019
FL4001
J5
J6
R4040
C4032
R4033
R4016
D3006
TP6008
QR4004
J30
Q2001
QR6005
Q6017
D6024
R6045
R6098
R6097
J40
QR6015
J14
R6080
R2030
R2034
QR6006
Q2002
R6076
R2029
R2031
R2032
R2033
R2036
R6072
D6023
R6074
R6073
R6042
R6075
C6018
P6006
P6007
QR1101
QR6008
Q6018
QR6014
D6031
J8
J10
D1103
D6017
TP1002
R1104
R1105
C1105
R6001
D6030
R6090
TP GND2
D6001
BP7301
P1101
J42
J7
D1102
J2
QR6016
R6096
J13
J41
C1101
C1106
C1108
J1101
C1103
TP1003
R6093
C1107
R7405
J17
D3006
P3006
L3004
R1102
P3003
J44
BP3001
C3001
J20
C3013
R3024
C1104
QR1102
Q1102
D1106
D1105
R1103
J41
J20
J13
Q1103
C7590
TP3002
QR3004
R3004
C1109
QR3002
D3003
QR3003
Q4007
C3005
C3004
J19
J9
J33
C3029
C3028
R3002
BP3002
J29
D3002
C3015
LUMINANCE & CHROMINANCE PACK
R3001
QR3007
R3023
C3031
QR7559
R7585
IC7553
R7583
R7586
R7584
R7582
C4029
QR3008
QR3006
C4030
R4026
IC7552
R7581
R7580
C3027
Q4006
D3004
J44
R3050
Q3050
R3018
R3014
R3025
C7571
R7595
R3020
D3007
D3001
QR3001
TP3001
R3013
C3016
C3014
L3002
C3006
R3011
C3026
R3017
Q3005
R3012
R3021
R3019
C3020
R4031
C3018
Q3003
R4030
R3005
INPUT/OUTPUT SELECT PACK
TO EARTH

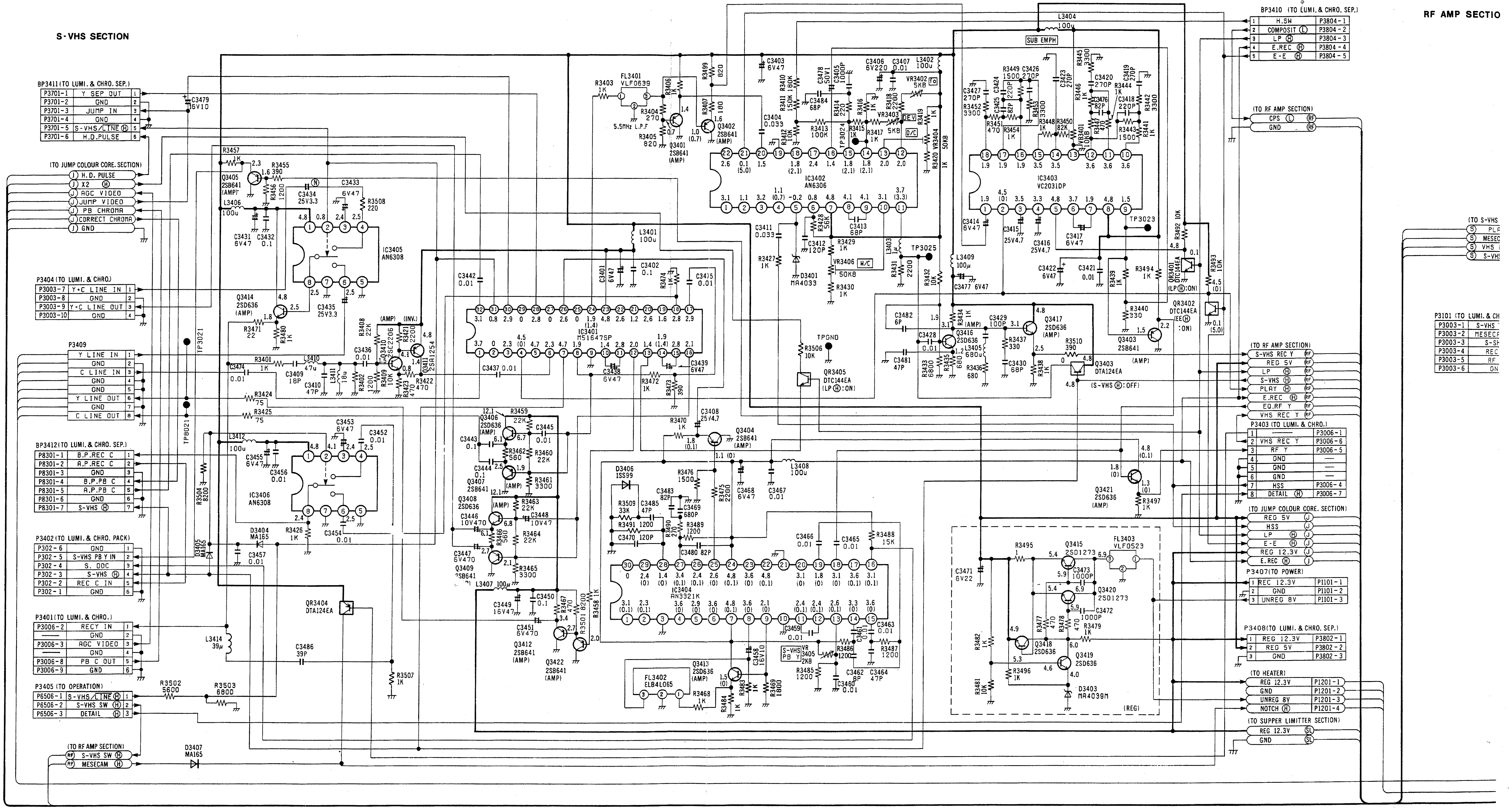
Luminanz- und Farbteil-Zusatzplatinen
Luminance and Chrominance Pack Circuit Boards

Luminanz- und Farbteil-Zusatzplatinen
Luminance and Chrominance Pack Circuit Boards

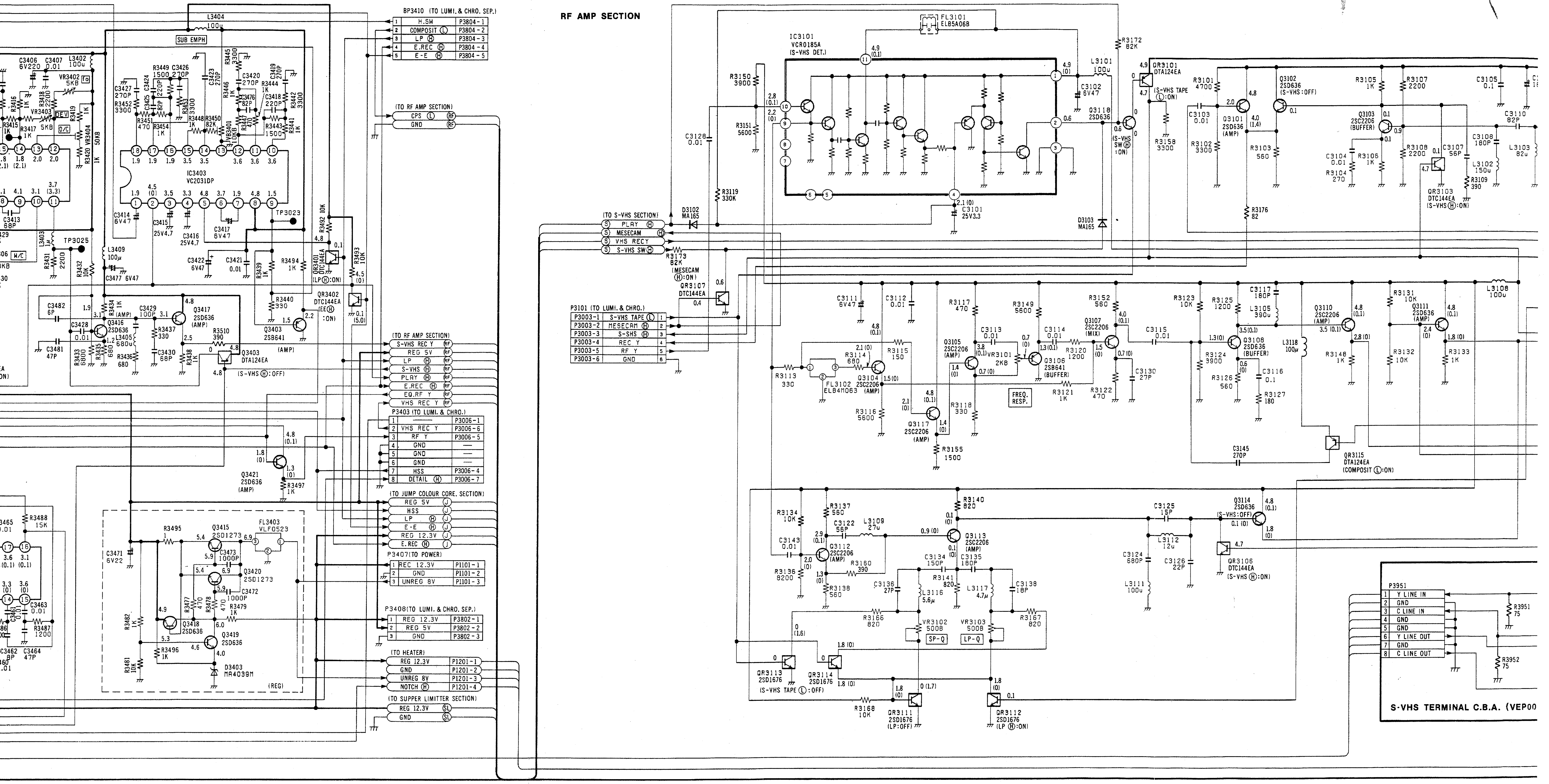
Secam-Zusatzplatine (EGC)
Secam Pack Circuit Board (EGC)


IC3601
QR3601
QR3602
QR3603
QR3604
QR3605
D3601
D3602
C3601
C3602
C3603
C3604
C3605
C3606
R3601
R3602
R3603
R3604
R3605
FL851
T851
SECAM KILLER
IC851
QR852
QR853
L851
C851
C852
C853
C854
C855
C856
C858
R851
R852
R853
R854
R855
R856
R858
(nur/only EGC)
FL301
FL302
FL303
FL801
DL801
DL802
P302
IC301
IC302
IC303
IC801
Q301
Q302
Q303
Q304
Q801
Q802
Q804
QR301
QR302
QR303
QR304
QR305
QR306
QR801
X301
X801
VR301
VR302
VR801
VR802
D301
D803
D804
D805
D806
CHROMA PHASE
CHROMA BALANCE
Y LEVEL
Y BALANCE
J1
J2
J3
J4
J5
J6
J7
J9

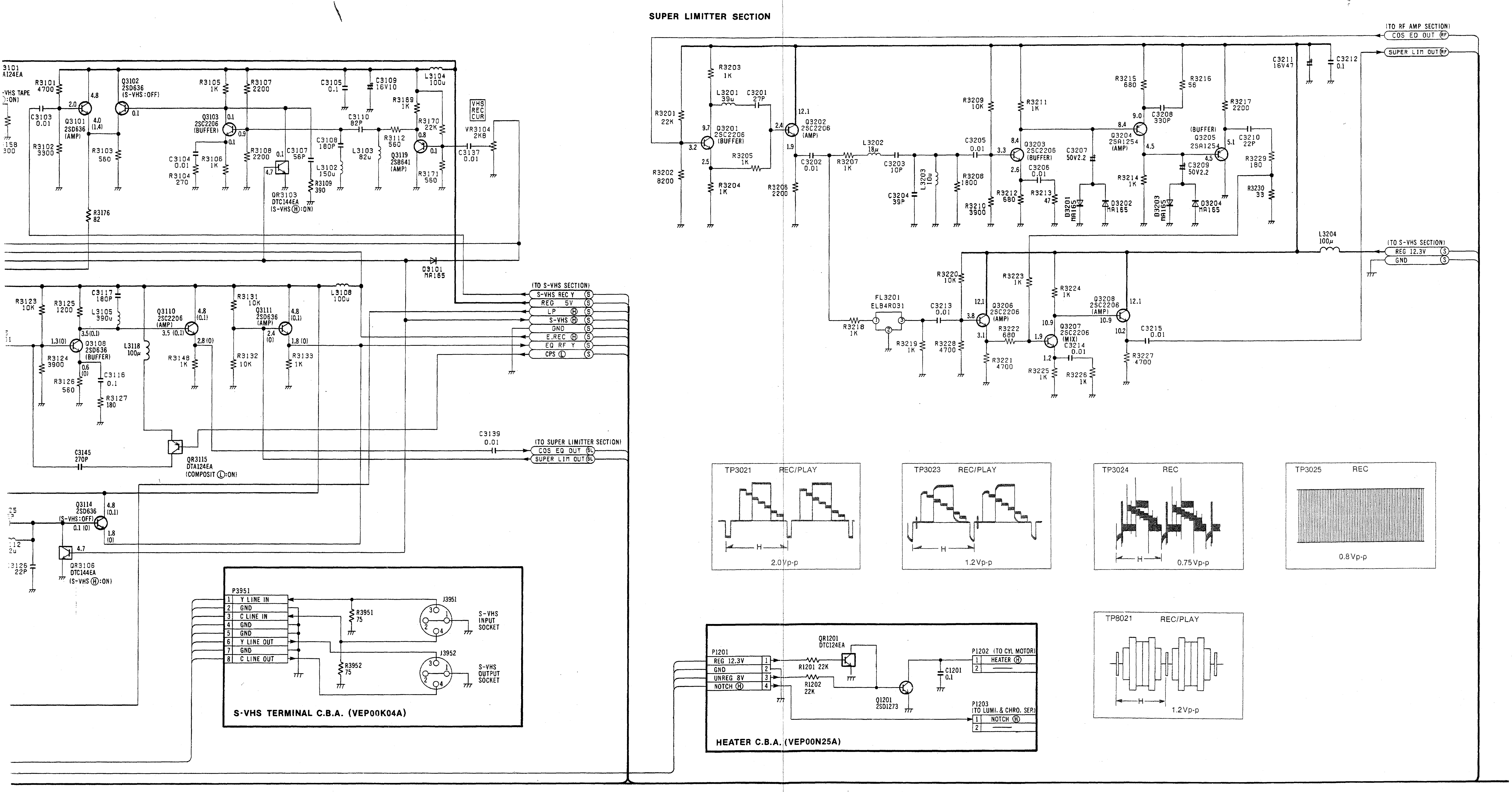
Schaltbild S-VHS-Teil
S-VHS Schematic Diagram


S·VHS SECTION
RF AMP SECTIO
BP3411 (TO LUMI. & CHRO. SEP.)
(TO JUMP COLOUR CORE. SECTION)
P3404 (TO LUMI. & CHRO.)
P3409
BP3412 (TO LUMI. & CHRO. SEP.)
P3402 (TO LUMI. & CHRO. PACK)
P3401 (TO LUMI. & CHRO.)
P3405 (TO OPERATION)
(TO RF AMP SECTION)
BP3410 (TO LUMI. & CHRO. SEP.)
P3403 (TO LUMI. & CHRO.)
P3407 (TO POWER)
P3408 (TO LUMI. & CHRO. SEP.)
(TO HEATER)
(TO SUPPER LIMITTER SECTION)
P3101 (TO LUMI. & CH
IC3401 M51647SP
IC3402 AN6306
IC3403 VC2031DP
IC3404 AN3321K
IC3405 AN6308
IC3406 AN6308
SUB EMPH
5.5MHz L.P.F
TPGND
TP3021
TP3023
TP3024
TP3025
(REG)

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe“, ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play“, ( )≙ Record (S-VHS : SP Mode).

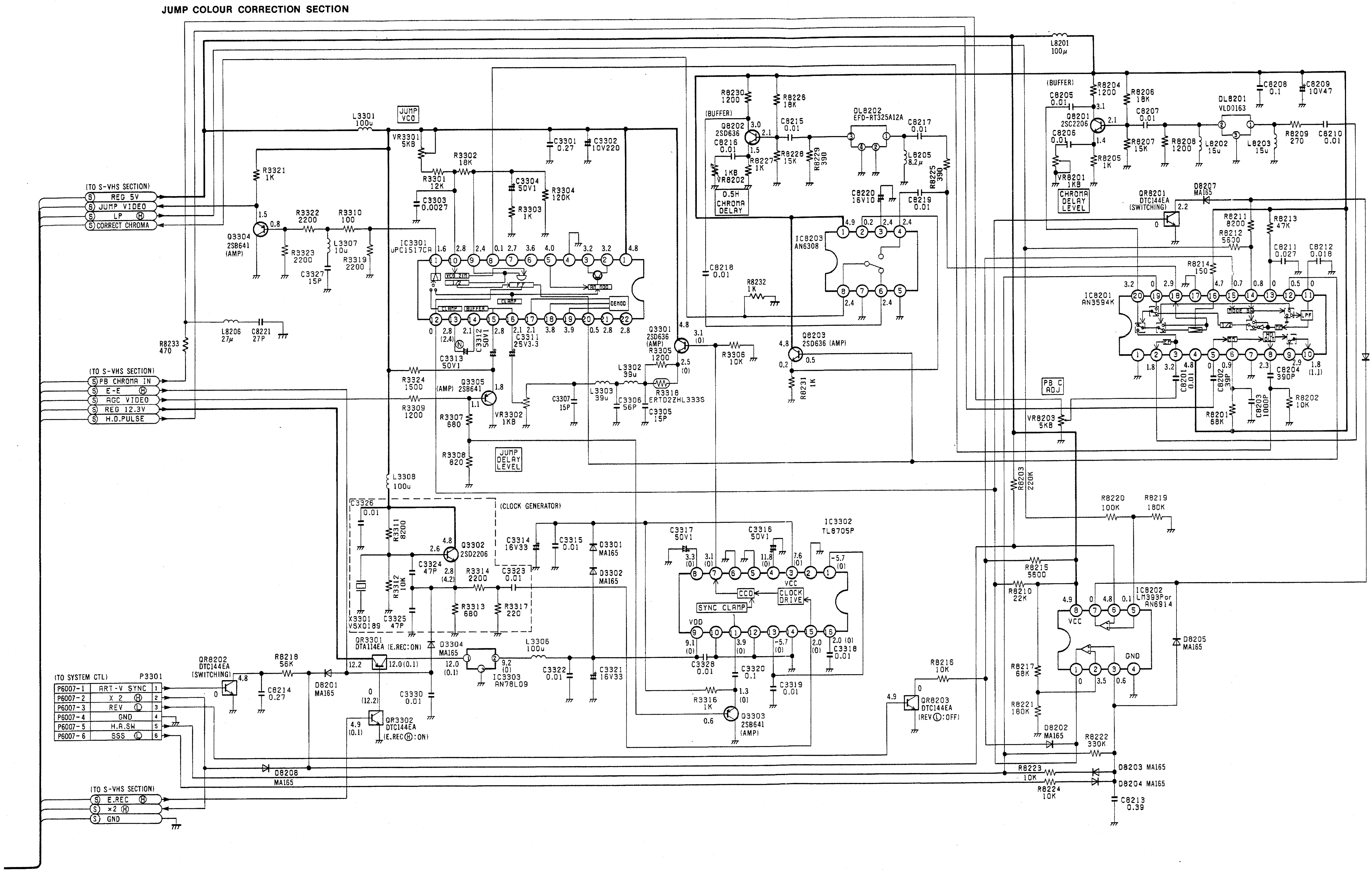

RF AMP SECTION
BP3410 (TO LUMI. & CHRO. SEP.)
H.SW P3804-1
COMPOSIT Ⓛ P3804-2
LP Ⓗ P3804-3
E.REC Ⓗ P3804-4
E-E Ⓗ P3804-5
(TO RF AMP SECTION)
CPS Ⓛ
GND
SUB EMPH
L3404 100μ
IC3403 VC2031DP
TP3023
TP3025
Q3416 (AMP) 2SD636
Q3417 2SD636 (AMP)
Q3403 DTA124EA
(S-VHS Ⓗ:OFF)
QR3401 DTC144EA (LP Ⓗ:ON)
QR3402 DTC144EA (EE Ⓗ:ON)
Q3403 2SB641 (AMP)
Q3421 2SD636 (AMP)
(TO RF AMP SECTION)
S-VHS REC Y
REG 5V
LP Ⓗ
S-VHS Ⓗ
PLAY Ⓗ
E.REC Ⓗ
EQ.RF Y
VHS REC Y
P3403 (TO LUMI. & CHRO.)
VHS REC Y P3006-6
RF Y P3006-5
GND
HSS P3006-4
DETAIL Ⓗ P3006-7
(TO JUMP COLOUR CORE. SECTION)
REG 5V
HSS
LP Ⓗ
E-E Ⓗ
REG 12.3V
E.REC Ⓗ
P3407 (TO POWER)
REC 12.3V P1101-1
GND P1101-2
UNREG 8V P1101-3
P3408 (TO LUMI. & CHRO. SEP.)
REG 12.3V P3802-1
REG 5V P3802-2
GND P3802-3
(TO HEATER)
REG 12.3V P1201-1
GND P1201-2
UNREG 8V P1201-3
NOTCH Ⓗ P1201-4
(TO SUPPER LIMITTER SECTION)
REG 12.3V
GND
Q3415 2SD1273
FL3403 VLF0523
Q3420 2SD1273
Q3418 2SD636
Q3419 2SD636
D3403 MA4039M
(REG)
IC3101 VCR0185A (S-VHS DET.)
FL3101 ELB5A068
L3101 100u
Q3118 2SD636
QR3101 DTA124EA
(S-VHS TAPE Ⓛ:ON)
(S-VHS SW Ⓗ:ON)
C3101 25V3.3
D3102 MA165
D3103 MA165
(TO S-VHS SECTION)
PLAY Ⓗ
MESECAM Ⓗ
VHS RECY
S-VHS SW Ⓗ
QR3107 DTC144EA (MESECAM Ⓗ:ON)
P3101 (TO LUMI. & CHRO.)
P3003-1 S-VHS TAPE Ⓛ
P3003-2 MESECAM Ⓗ
P3003-3 S-SHS Ⓗ
P3003-4 REC Y
P3003-5 RF Y
P3003-6 GND
Q3101 2SD636 (AMP)
Q3102 2SD636 (S-VHS:OFF)
Q3103 2SC2206 (BUFFER)
QR3103 DTC144EA (S-VHS Ⓗ:ON)
FL3102 ELB4M063
Q3104 2SC2206 (AMP)
Q3105 2SC2206 (AMP)
VR3101 2KB
Q3106 2SB641 (BUFFER)
Q3107 2SC2206 (MIX)
FREQ. RESP.
Q3117 2SC2206 (AMP)
Q3108 2SD636 (BUFFER)
Q3110 2SC2206 (AMP)
Q3111 2SD636 (AMP)
QR3115 DTA124EA (COMPOSIT Ⓛ:ON)
Q3112 2SC2206 (AMP)
Q3113 2SC2206 (AMP)
Q3114 2SD636 (S-VHS:OFF)
QR3106 DTC144EA (S-VHS Ⓗ:ON)
VR3102 500B SP-Q
VR3103 500B LP-Q
QR3113 2SD1676 (S-VHS TAPE Ⓛ:OFF)
QR3114 2SD1676
QR3111 2SD1676 (LP:OFF)
QR3112 2SD1676 (LP Ⓗ:ON)
P3951
1 Y LINE IN
2 GND
3 C LINE IN
4 GND
5 GND
6 Y LINE OUT
7 GND
8 C LINE OUT
R3951 75
R3952 75
S-VHS TERMINAL C.B.A. (VEP00

Schaltbild S-VHS-Teil
S-VHS Schematic Diagram


SUPER LIMITTER SECTION
(TO RF AMP SECTION)
COS EQ OUT RF
SUPER LIM OUT RF
(TO S-VHS SECTION)
REG 12.3V S
GND S
(TO S-VHS SECTION)
S-VHS REC Y S
REG 5V S
LP H S
S-VHS H S
GND S
E.REC H S
EQ RF Y S
CPS L S
(TO SUPER LIMITTER SECTION)
COS EQ OUT SL
SUPER LIM OUT SL
Q3101 2SD636 (AMP)
Q3102 2SD636 (S-VHS:OFF)
Q3103 2SC2206 (BUFFER)
Q3119 2SB641 (AMP)
QR3103 DTC144EA (S-VHS H:ON)
VHS REC CUR
VR3104 2K8
D3101 MA165
Q3106 2SD636 (BUFFER)
Q3110 2SC2206 (AMP)
Q3111 2SD636 (AMP)
QR3115 DTA124EA (COMPOSIT L:ON)
Q3114 2SD636 (S-VHS:OFF)
QR3106 DTC144EA (S-VHS H:ON)
C3139 0.01
Q3201 2SC2206 (BUFFER)
Q3202 2SC2206 (AMP)
Q3203 2SC2206 (BUFFER)
Q3204 2SA1254 (AMP)
Q3205 2SA1254 (BUFFER)
D3201 MA165
D3202 MA165
D3203 MA165
D3204 MA165
FL3201 ELB4R031
Q3206 2SC2206 (AMP)
Q3207 2SC2206 (MIX)
Q3208 2SC2206 (AMP)
L3204 100µ
P3951
1 Y LINE IN
2 GND
3 C LINE IN
4 GND
5 GND
6 Y LINE OUT
7 GND
8 C LINE OUT
R3951 75
R3952 75
J3951
J3952
S-VHS INPUT SOCKET
S-VHS OUTPUT SOCKET
S-VHS TERMINAL C.B.A. (VEP00K04A)
P1201
1 REG 12.3V
2 GND
3 UNREG 8V
4 NOTCH H
QR1201 DTC124EA
R1201 22K
R1202 22K
Q1201 2SD1273
C1201 0.1
P1202 (TO CYL MOTOR)
1 HEATER H
P1203 (TO LUMI. & CHRO. SEP.)
1 NOTCH H
HEATER C.B.A. (VEP00N25A)
TP3021 REC/PLAY 2.0Vp-p H
TP3023 REC/PLAY 1.2Vp-p H
TP3024 REC 0.75Vp-p H
TP3025 REC 0.8Vp-p
TP8021 REC/PLAY 1.2Vp-p H

Für Werte ohne Bezeichnung F (µF) oder Ω einsetzen.
Read F (µF) or Ω respectively unless otherwise noted.

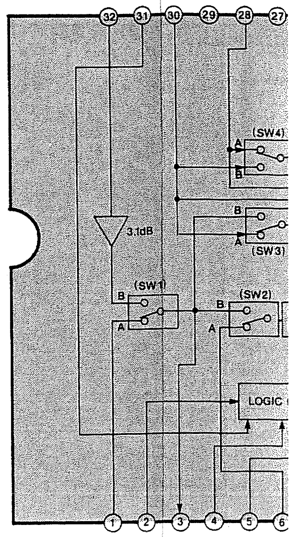
Schaltbild S-VHS-Teil
S-VHS Schematic Diagram


JUMP COLOUR CORRECTION SECTION
(TO S-VHS SECTION)
REG 5V
JUMP VIDEO
LP Ⓗ
CORRECT CHROMA
PB CHROMA IN
E-E Ⓗ
AGC VIDEO
REG 12.3V
H.D.PULSE
(TO SYSTEM CTL) P3301
P6007-1 ART-V SYNC 1
P6007-2 ×2 Ⓗ 2
P6007-3 REV Ⓛ 3
P6007-4 GND 4
P6007-5 H.A.SW 5
P6007-6 SSS Ⓛ 6
E.REC Ⓗ
×2 Ⓗ
GND
IC3301 uPC1517CA
JUMP VCO
JUMP DELAY LEVEL
Q3304 2SB641 (AMP)
Q3305 2SB641 (AMP)
Q3301 2SD636 (AMP)
Q3302 2SD2206
Q3303 2SB641 (AMP)
(CLOCK GENERATOR)
X3301 VSX0189
IC3302 TL8705P
SYNC CLAMP
CCD
CLOCK DRIVE
VCC
VDD
IC3303 AN78L09
QR3301 DTA114EA (E.REC:ON)
QR3302 DTC144EA (E.REC Ⓗ:ON)
QR8202 DTC144EA (SWITCHING)
D8201 MA165
D8208 MA165
D3304 MA165
D3301 MA165
D3302 MA165
L8201 100μ
(BUFFER)
Q8202 2SD636
DL8202 EFD-RT325A12A
0.5H CHROMA DELAY
IC8203 AN6308
Q8203 2SD636 (AMP)
Q8201 2SC2206
DL8201 VLD0163
CHROMA DELAY LEVEL
QR8201 DTC144EA (SWITCHING)
D8207 MA165
IC8201 AN3594K
PB C ADJ
VR8203 5KB
D8206 MA165
IC8202 LM393P or AN6914
D8205 MA165
QR8203 DTC144EA (REV Ⓛ:OFF)
D8202 MA165
D8203 MA165
D8204 MA165
C8213 0.39

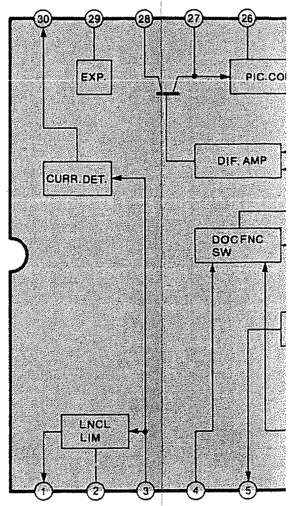
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

Blockdarstellung d
Block Diagram of S

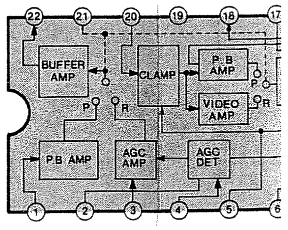
IC3401 (M51647SP)


3.1dB
(SW4)
(SW3)
(SW1)
(SW2)
LOGIC

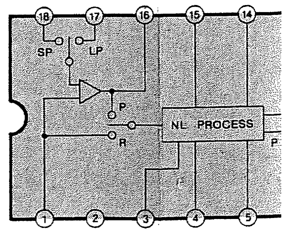
IC3404 (AN3321K)


EXP.
PIC.CO
CURR.DET.
DIF. AMP
DOCFNC SW
LNCL LIM

IC3402 (AN6306)

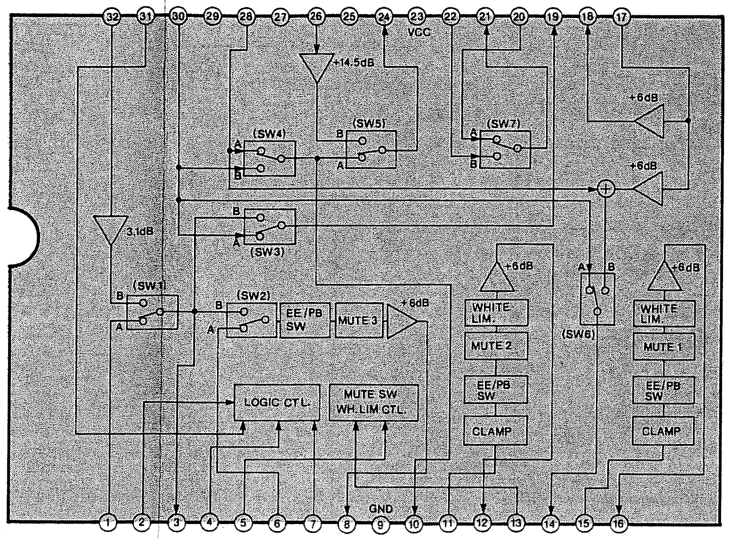

BUFFER AMP
CLAMP
P.B AMP
VIDEO AMP
P.B AMP
AGC AMP
AGC DET

IC3403 (VC2031DP)

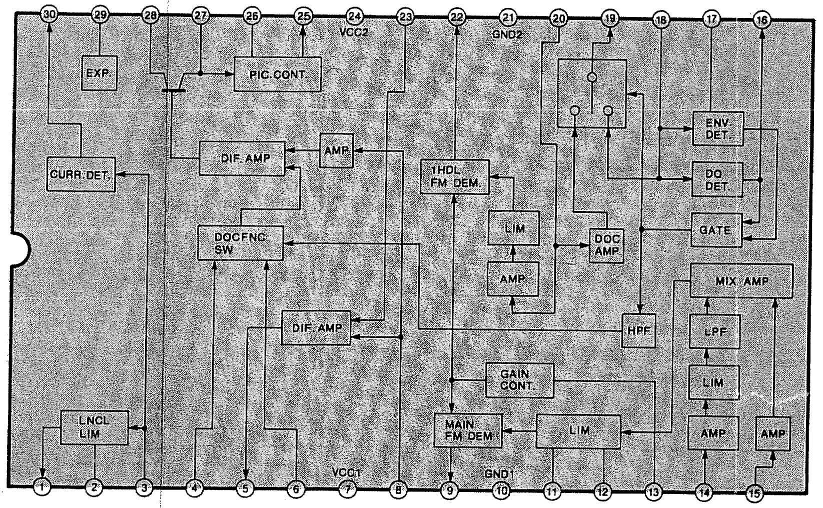

SP
LP
NL PROCESS

Blockdarstellung der S-VHS-IC's
Block Diagram of S-VHS IC's

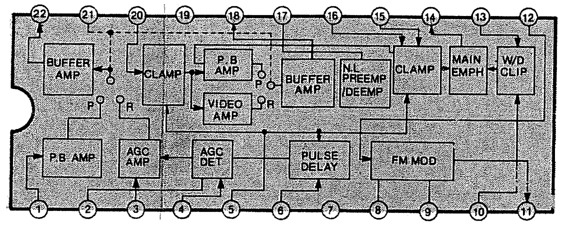
IC3401 (M51647SP)


VCC
+14.5dB
(SW4)
(SW5)
(SW7)
+6dB
3.1dB
(SW3)
(SW1)
(SW2)
EE/PB SW
MUTE 3
+6dB
WHITE LIM.
MUTE 2
EE/PB SW
CLAMP
(SW6)
MUTE 1
LOGIC CTL.
MUTE SW WH.LIM CTL.
GND

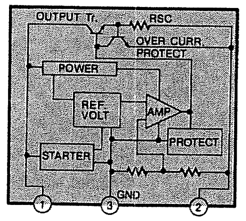
IC3404 (AN3321K)


VCC2
GND2
EXP.
PIC.CONT.
CURR.DET.
DIF.AMP
AMP
1HDL FM DEM.
ENV. DET.
DO DET.
LIM
DOC AMP
GATE
DOCFNC SW
AMP
MIX AMP
DIF.AMP
HPF
LPF
LIM
GAIN CONT.
LNCL LIM
MAIN FM DEM.
LIM
AMP
AMP
VCC1
GND1

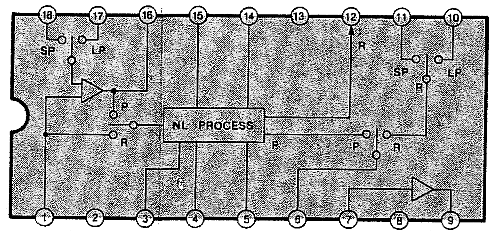
IC3402 (AN6306)


BUFFER AMP
CLAMP
P.B AMP
BUFFER AMP
NL PREEMP /DEEMP
CLAMP
MAIN EMPH
W/D CLIP
VIDEO AMP
P.B AMP
AGC AMP
AGC DET
PULSE DELAY
FM MOD

IC3303 (AN78L09)

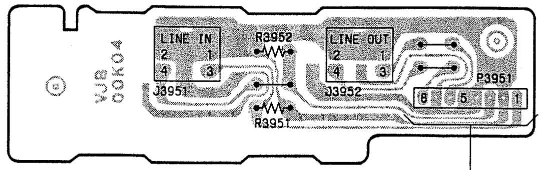

OUTPUT Tr
RSC
OVER CURR PROTECT
POWER
REF. VOLT
AMP
PROTECT
STARTER
GND

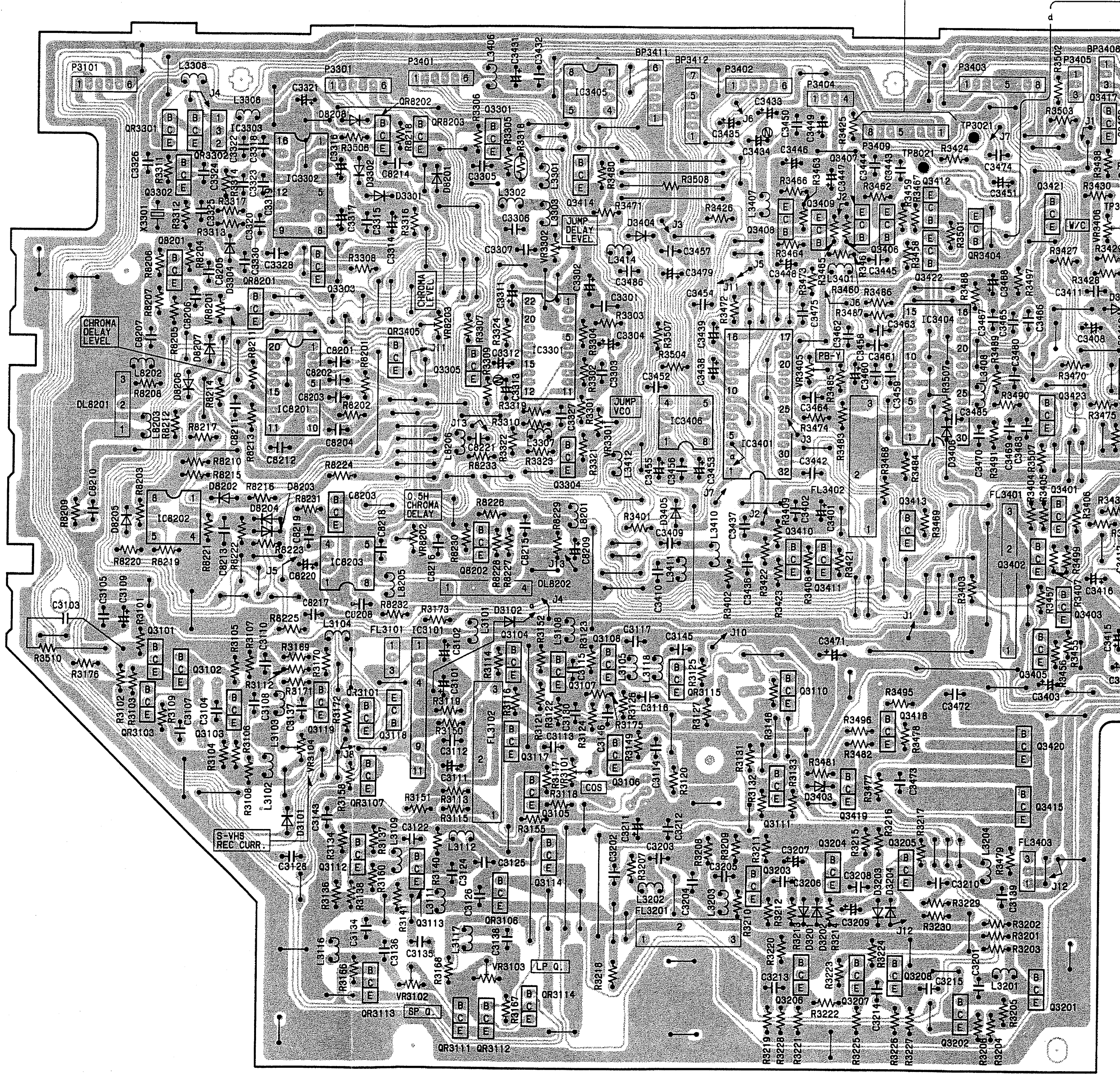
IC3403 (VC2031DP)


SP
LP
NL PROCESS

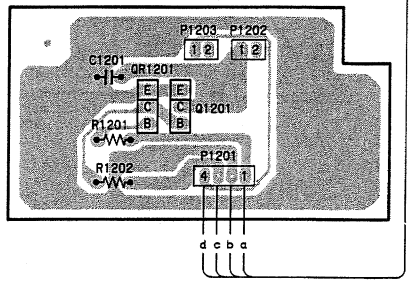
Platine S-VHS-Teil
S-VHS Circuit Board

S-VHS-Buchsenplatine
S-VHS Terminal C.B.A.

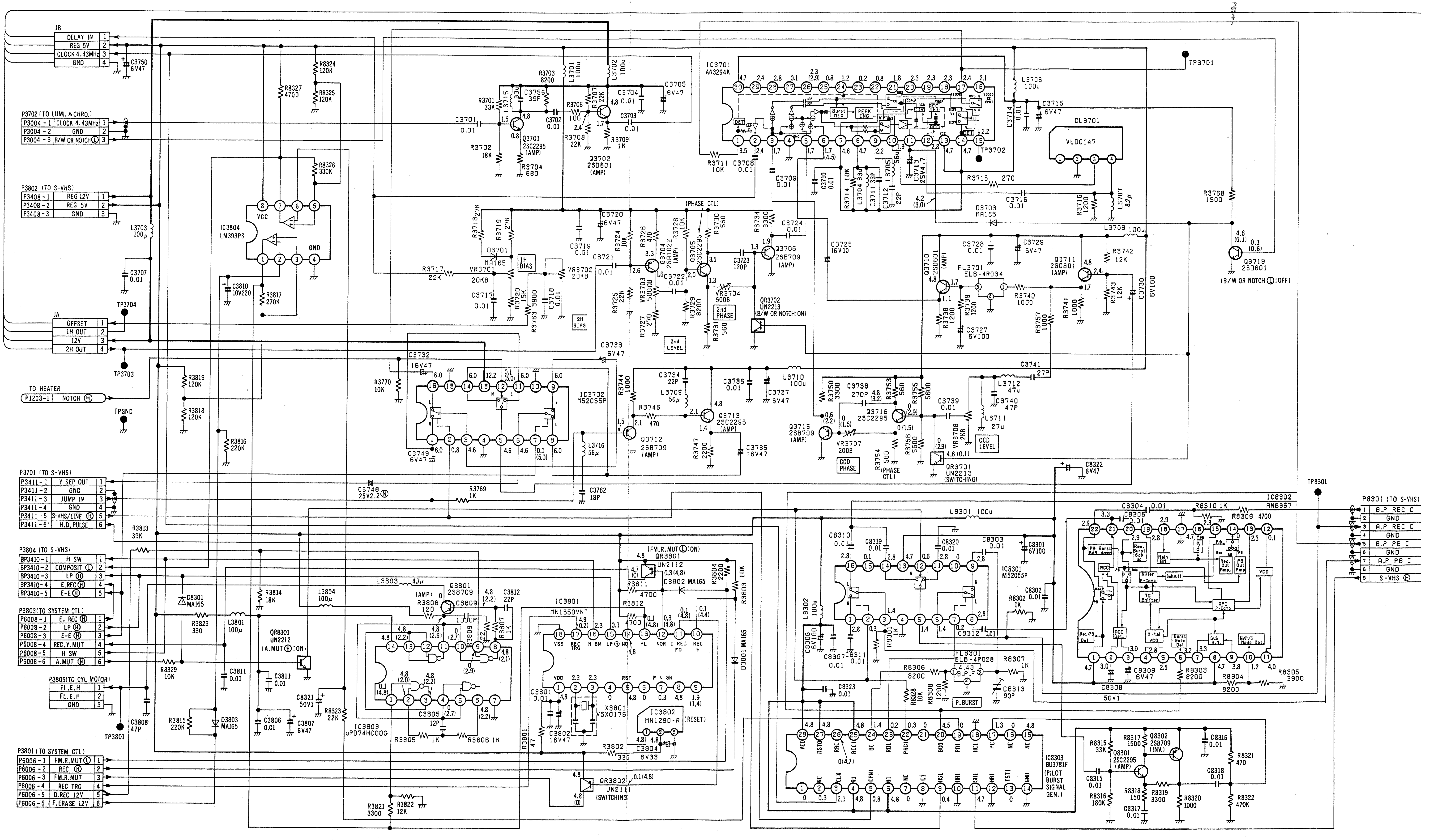

LINE IN
LINE OUT
J3951
J3952
R3952
R3951
P3951
VJB 00K04


P3101
P3301
P3401
BP3411
BP3412
P3402
P3403
P3404
BP3408
P3405
P3407
BP3410
IC3301
IC3302
IC3303
IC3401
IC3402
IC3403
IC3404
IC3405
IC3406
IC3101
IC8201
IC8202
IC8203
CHROMA DELAY LEVEL
JUMP DELAY LEVEL
CHROMA LEVEL
JUMP VCO
0.5H CHROMA DELAY
PB-Y
W/C
D/C
DEV
SUB EMPH. LEVEL
S-VHS REC CURR.
COS
LP Q.
SP Q.
TPGND
TP3021
TP3023
TP3024
TP3025
FL3101
FL3401
FL3402
FL3403
DL8201
DL8202
J1
J2
J3
J4
J5
J6
J7
J8
J10
J12

Heizplatine
Heater C.B.A.


P1203
P1202
C1201
QR1201
Q1201
R1201
R1202
P1201
d
c
b
a

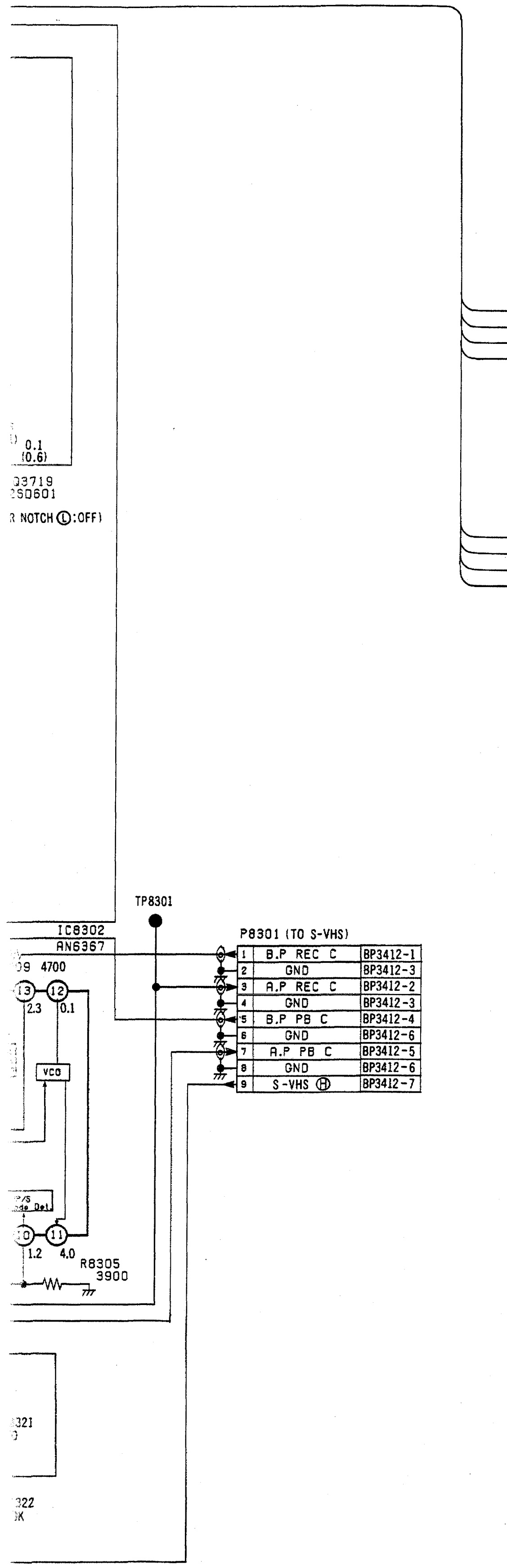
Schaltbild des S-VHS-Luminanz- und Farbteils
S-VHS-Luminance and Chrominance Schematic Diagram

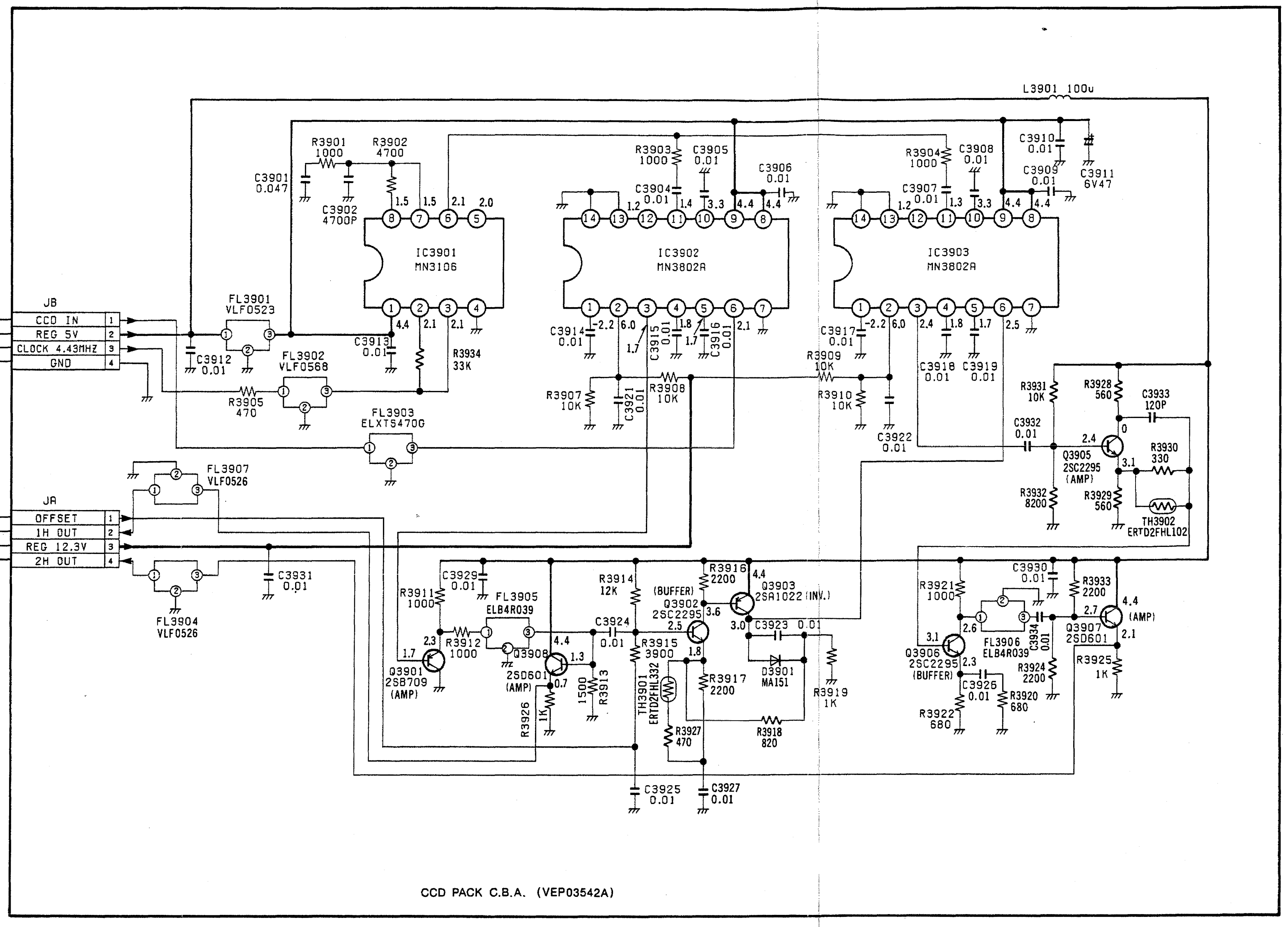


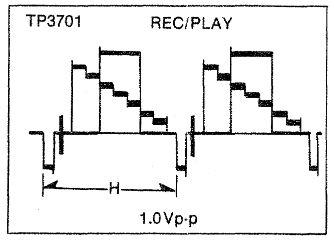
JB
DELAY IN
REG 5V
CLOCK 4.43MHz
GND
P3702 (TO LUMI. & CHRO.)
P3802 (TO S-VHS)
JA
OFFSET
1H OUT
12V
2H OUT
TO HEATER
P1203-1 NOTCH Ⓗ
P3701 (TO S-VHS)
Y SEP OUT
JUMP IN
S-VHS/LINE Ⓗ
H.D.PULSE
P3804 (TO S-VHS)
H SW
COMPOSIT Ⓛ
LP Ⓗ
E.REC Ⓗ
E-E Ⓗ
P3803 (TO SYSTEM CTL)
E. REC Ⓗ
REC.Y.MUT
A.MUT Ⓗ
P3805 (TO CYL MOTOR)
FL.E.H
P3801 (TO SYSTEM CTL)
FM.R.MUT Ⓛ
REC Ⓗ
FM.R.MUT
REC TRG
D.REC 12V
F.ERASE 12V
IC3804 LM393PS
IC3701 AN3294K
IC3702 M52055P
IC3801 MN1550VNT
IC3802 MN1280-R (RESET)
IC3803 uPD74HC00G
IC8301 M52055P
IC8302 AN6367
IC8303 BU3781F (PILOT BURST SIGNAL GEN.)
DL3701 VL00147
FL3701 ELB-4R034
FL8301 ELB-4P028
X3801 VSX0176
TP3701
TP3702
TP3703
TP3704
TPGND
TP3801
TP8301
P8301 (TO S-VHS)
B.P REC C
A.P REC C
B.P PB C
A.P PB C
S-VHS Ⓗ
(PHASE CTL)
1H BIAS
2H BIAS
2nd PHASE
2nd LEVEL
CCD LEVEL
CCD PHASE
P.BURST
(B/W OR NOTCH Ⓛ:OFF)
(B/W OR NOTCH:ON)
(SWITCHING)
(A.MUT Ⓗ:ON)
(FM.R.MUT Ⓛ:ON)

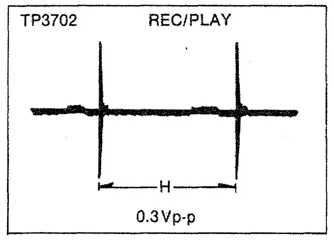
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

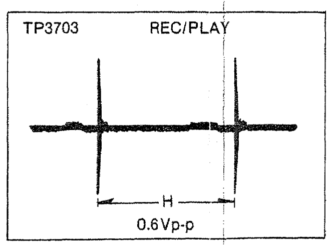
Schaltbild des S-VHS-Luminanz- und Farbteils
S-VHS-Luminance and Chrominance Schematic Diagram

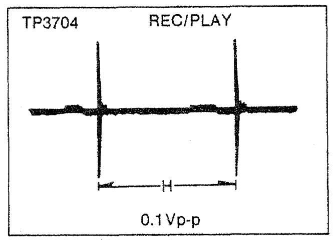

0.1
(0.6)
Q3719
2SD601
NOTCH Ⓛ:OFF
TP8301
IC8302
AN6367
4700
2.3
0.1
VCO
1.2
4.0
R8305
3900
P8301 (TO S-VHS)
1 B.P REC C BP3412-1
2 GND BP3412-3
3 A.P REC C BP3412-2
4 GND BP3412-3
5 B.P PB C BP3412-4
6 GND BP3412-6
7 A.P PB C BP3412-5
8 GND BP3412-6
9 S-VHS Ⓗ BP3412-7


L3901 100u
R3901 1000
R3902 4700
C3901 0.047
C3902 4700P
IC3901 MN3106
IC3902 MN3802A
IC3903 MN3802A
R3903 1000
C3905 0.01
C3906 0.01
C3904 0.01
R3904 1000
C3908 0.01
C3907 0.01
C3910 0.01
C3909 0.01
C3911 6V47
JB
CCD IN
REG 5V
CLOCK 4.43MHZ
GND
FL3901 VLF0523
FL3902 VLF0568
C3912 0.01
C3913 0.01
R3934 33K
R3905 470
FL3903 ELXTS470G
C3914 0.01
C3915 0.01
C3916 0.01
R3907 10K
C3921 0.01
R3908 10K
C3917 0.01
R3909 10K
R3910 10K
C3918 0.01
C3919 0.01
C3922 0.01
R3931 10K
R3928 560
C3933 120P
C3932 0.01
Q3905 2SC2295 (AMP)
R3930 330
R3932 8200
R3929 560
TH3902 ERTD2FHL102
FL3907 VLF0526
JA
OFFSET
1H OUT
REG 12.3V
2H OUT
FL3904 VLF0526
C3931 0.01
C3929 0.01
R3911 1000
FL3905 ELB4R039
R3912 1000
Q3901 2SB709 (AMP)
Q3908 2SD601 (AMP)
R3926 1K
R3913 1500
R3914 12K
C3924 0.01
R3916 2200
Q3902 2SC2295 (BUFFER)
Q3903 2SA1022 (INV.)
R3915 3900
C3923 0.01
TH3901 ERTD2FHL332
R3917 2200
D3901 MA151
R3919 1K
R3927 470
R3918 820
C3925 0.01
C3927 0.01
C3930 0.01
R3921 1000
R3933 2200
Q3907 2SD601 (AMP)
FL3906 ELB4R039
Q3906 2SC2295 (BUFFER)
C3934 0.01
R3924 2200
R3925 1K
C3926 0.01
R3920 680
R3922 680
CCD PACK C.B.A. (VEP03542A)





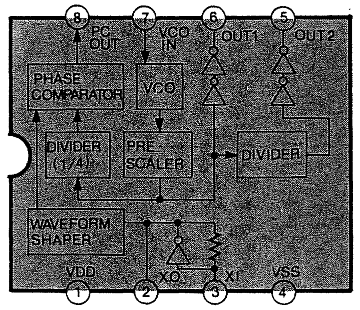




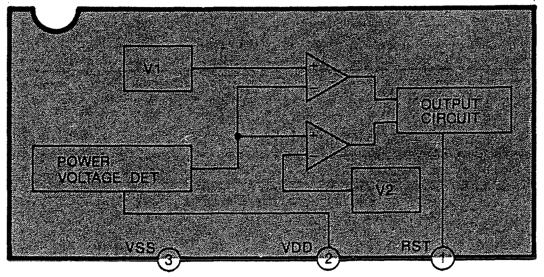
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Blockdarstellung der S-VHS Luminanz- und Farbteil-IC's
Block-Diagram of S-VHS Luminance and Chrominance IC's

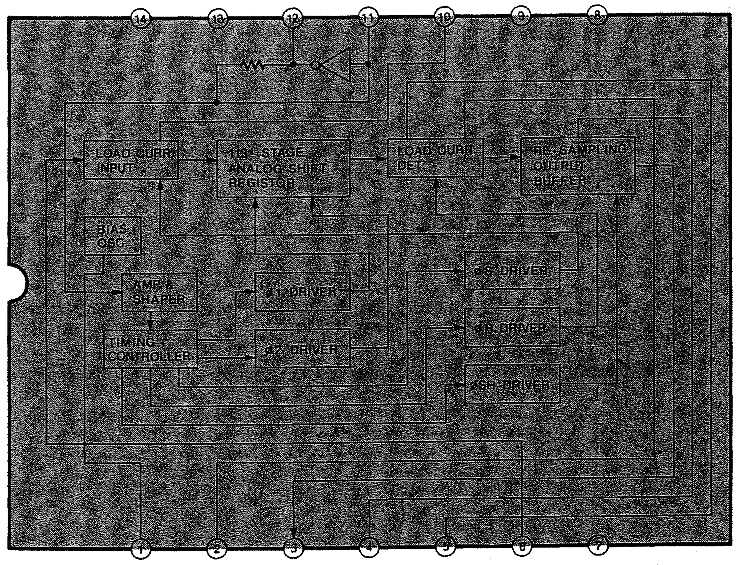
IC3901 (MN3106)


PC OUT
VCO IN
OUT1
OUT2
PHASE COMPARATOR
VCO
DIVIDER (1/4)
PRE SCALER
DIVIDER
WAVEFORM SHAPER
VDD
XO
XI
VSS

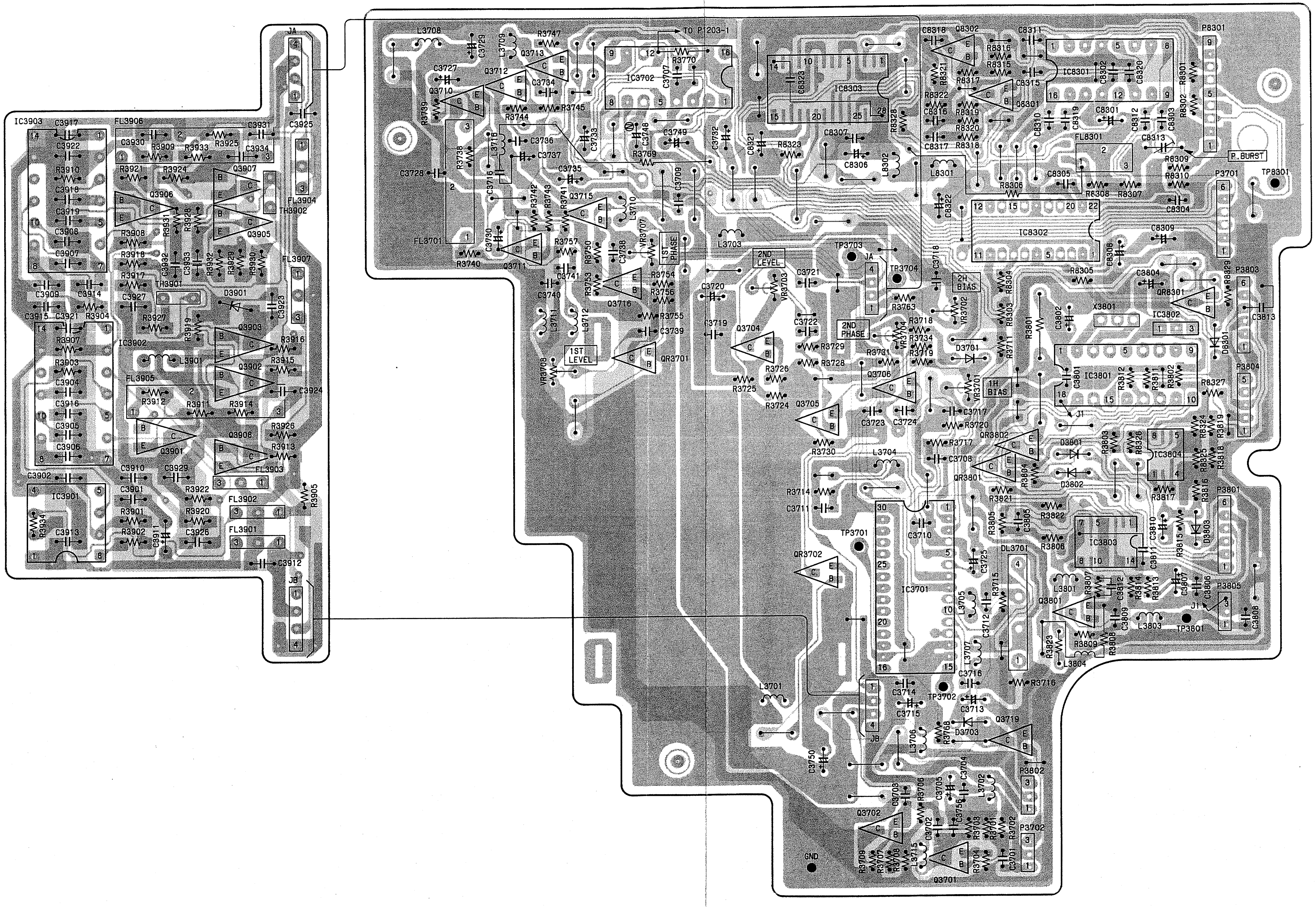
IC3802 (MN1280R)


V1
OUTPUT CIRCUIT
POWER VOLTAGE DET
V2
VSS
VDD
RST

IC3902, 3903 (MN3802A)

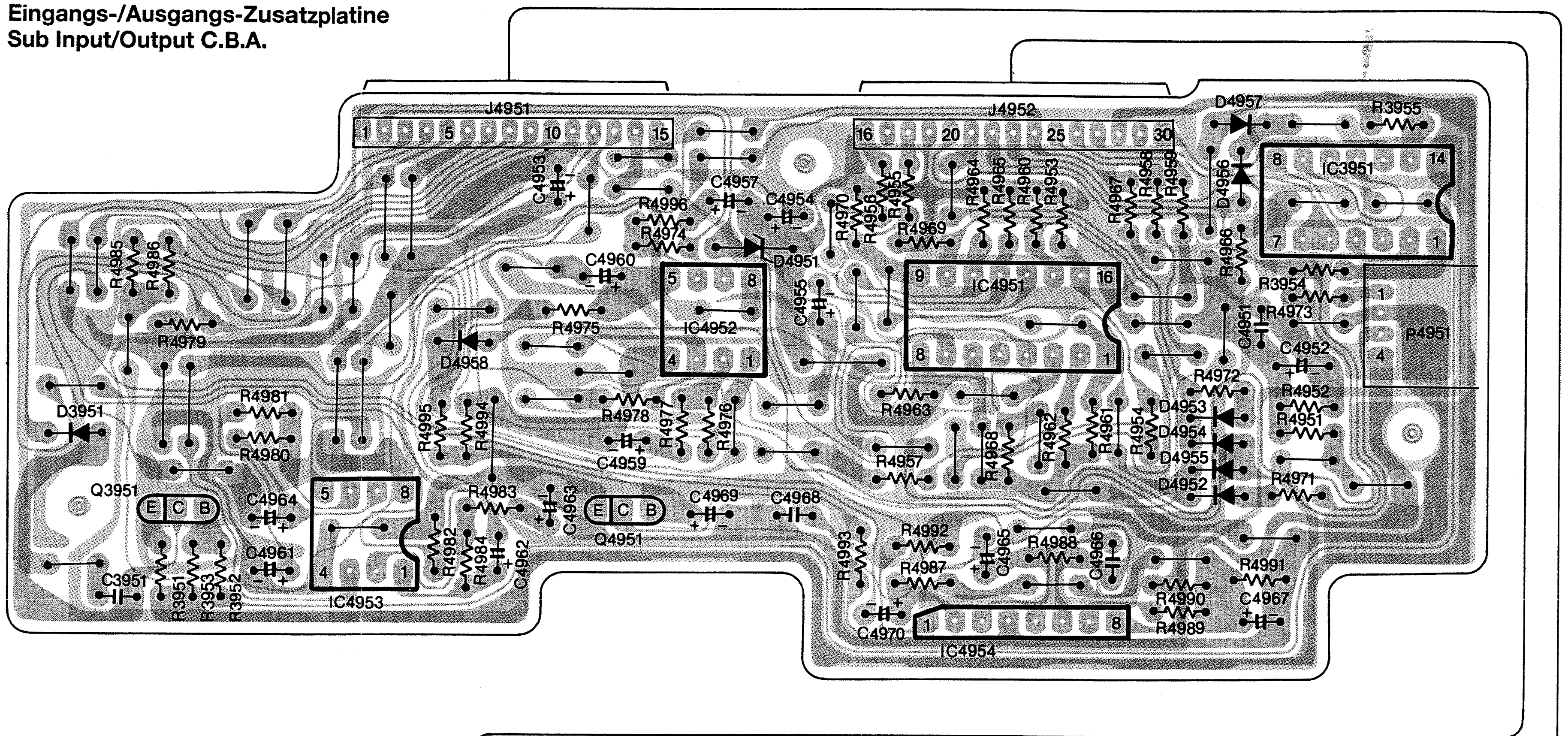

LOAD CURR INPUT
1134 STAGE ANALOG SHIFT REGISTOR
LOAD CURR DET
PRE-SAMPLING OUTPUT BUFFER
BIAS OSC
AMP & SHAPER
φ1 DRIVER
φ2 DRIVER
TIMING CONTROLLER
φS DRIVER
φR DRIVER
φSH DRIVER

Platinen des S-VHS-Luminanz- und Farbteils
S-VHS Luminance and Chrominance C.B's


IC3903
IC3902
IC3901
FL3906
FL3905
FL3904
FL3903
FL3902
FL3901
FL3907
TH3901
TH3902
D3901
JA
JB
TO P1203-1
IC3702
IC3701
IC8303
IC8301
IC8302
IC3801
IC3802
IC3803
IC3804
FL3701
FL8301
1ST LEVEL
2ND LEVEL
1ST PHASE
2ND PHASE
2H BIAS
1H BIAS
P.BURST
TP3701
TP3702
TP3703
TP3704
TP3801
TP8301
P8301
P3701
P3702
P3801
P3802
P3803
P3804
P3805
X3801
DL3701
GND

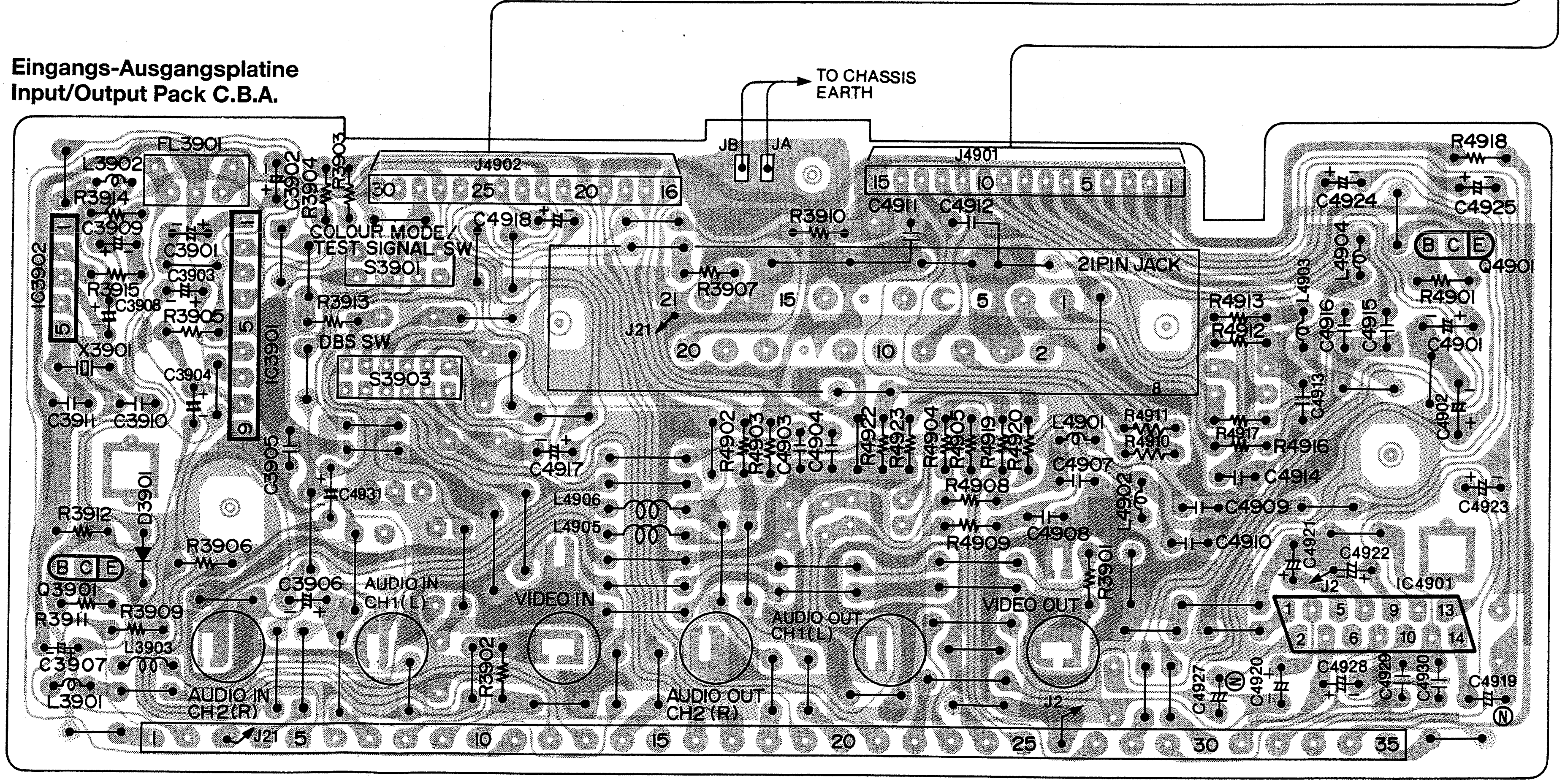
Eingangs/Ausgangsplatinen (EGC)
Input/Output C.B.A's (EGC)

Eingangs-/Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.

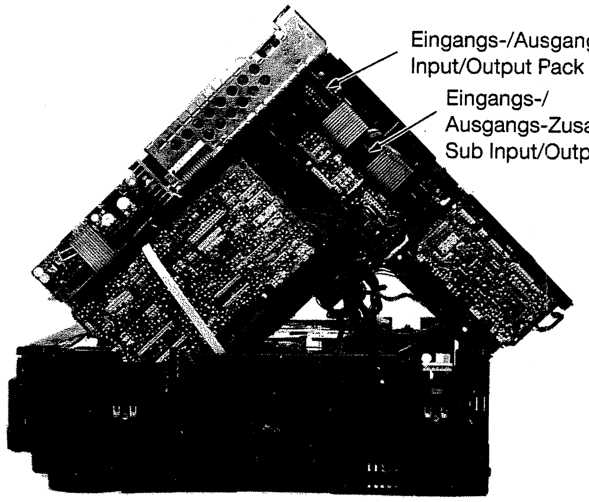


J4951
J4952
D4957
R3955
IC3951
IC4951
IC4952
IC4953
IC4954
P4951
Q3951
Q4951
D3951
D4951
D4952
D4953
D4954
D4955
D4956
D4958
R4979
R4980
R4981
R4985
R4986
C3951
C4951
C4952
C4953
C4954
C4957
C4959
C4960
C4961
C4964
C4967
C4968
C4969
C4970
E C B

Eingangs-Ausgangsplatine
Input/Output Pack C.B.A.



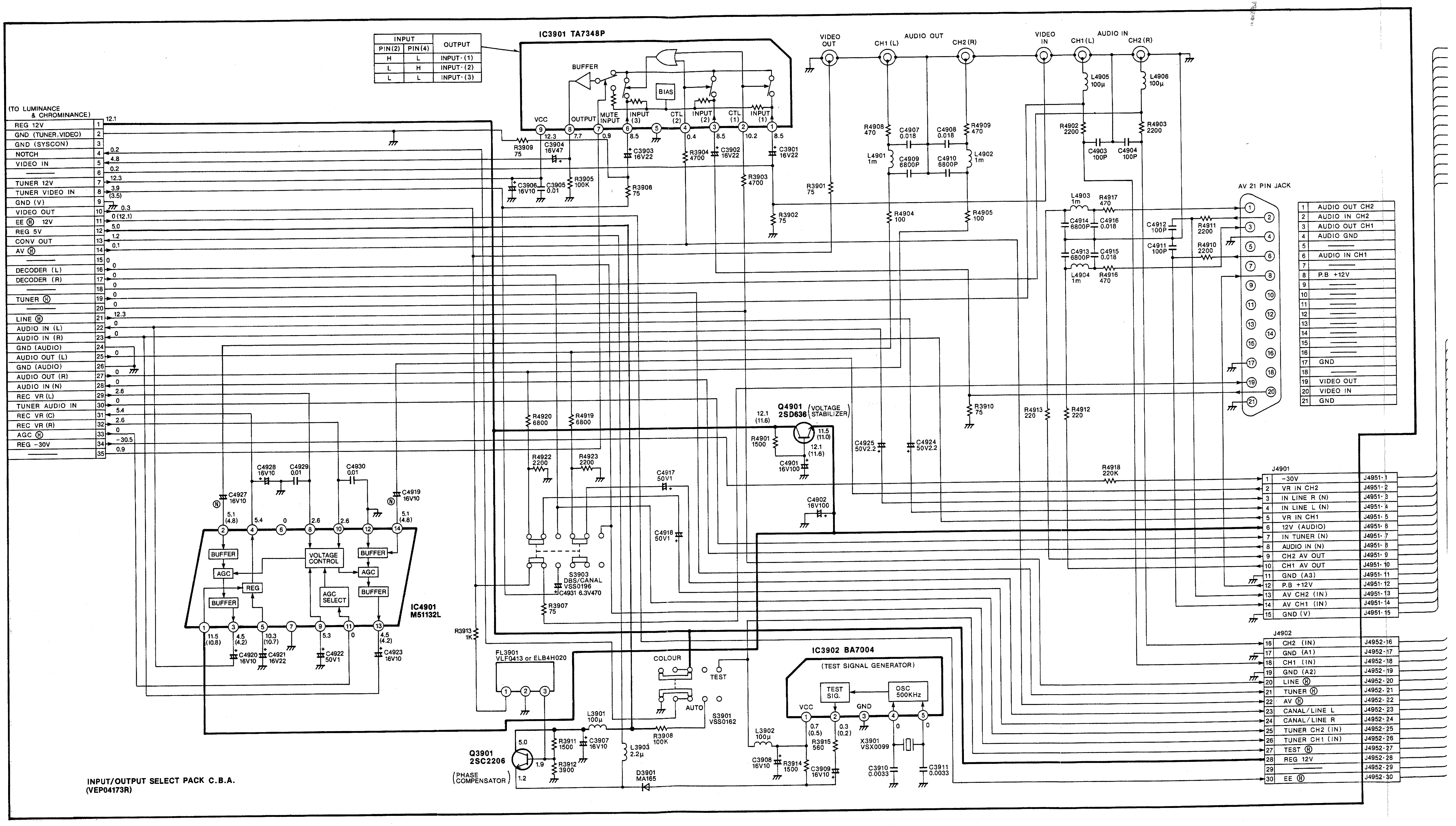
TO CHASSIS EARTH
JB
JA
FL3901
J4902
J4901
L3902
R3914
IC3902
IC3901
C3909
C3901
C3903
R3915
C3908
R3905
X3901
C3904
C3911
C3910
COLOUR MODE / TEST SIGNAL SW
S3901
R3913
DBS SW
S3903
R3910
R3907
C4911
C4912
C4918
21PIN JACK
J21
R4913
R4912
R4918
C4924
C4925
Q4901
R4901
C4901
L4903
L4904
C4915
C4916
R3912
D3901
R3906
Q3901
R3911
R3909
C3907
L3903
L3901
C3906
C4931
C4917
L4906
L4905
AUDIO IN CH1(L)
AUDIO IN CH2(R)
VIDEO IN
AUDIO OUT CH1(L)
AUDIO OUT CH2(R)
VIDEO OUT
R3902
R3901
L4901
L4902
C4907
C4908
R4908
R4909
R4911
R4910
R4916
R4917
C4914
C4909
C4910
C4923
C4922
C4921
IC4901
J2
C4927
C4920
C4928
C4929
C4930
C4919
B C E



Eingangs-/Ausgangsplatine
Input/Output Pack C.B.A.

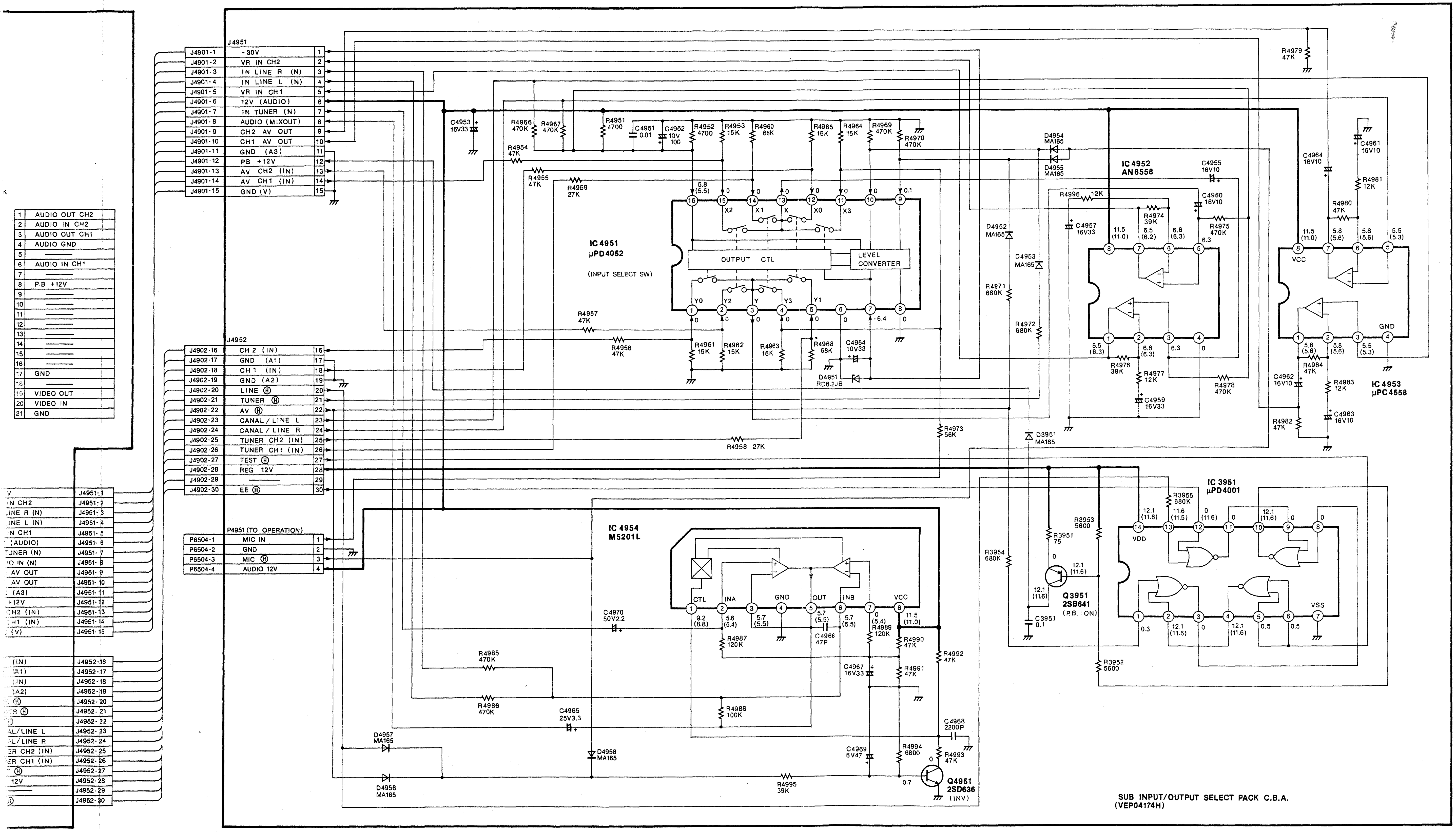
Eingangs-/
Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.

Schaltbild Eingangs-/Ausgangsteil (EGC)
Input/Output pack and Sub Input/Output Schematic Diagram (EGC)


IC3901 TA7348P
INPUT PIN(2) PIN(4) OUTPUT
H L INPUT-(1)
L H INPUT-(2)
L L INPUT-(3)
BUFFER
BIAS
VCC
OUTPUT
MUTE INPUT
INPUT (3)
CTL (2)
INPUT (2)
CTL (1)
INPUT (1)
(TO LUMINANCE & CHROMINANCE)
1 REG 12V
2 GND (TUNER,VIDEO)
3 GND (SYSCON)
4 NOTCH
5 VIDEO IN
6
7 TUNER 12V
8 TUNER VIDEO IN
9 GND (V)
10 VIDEO OUT
11 EE Ⓗ 12V
12 REG 5V
13 CONV OUT
14 AV Ⓗ
15
16 DECODER (L)
17 DECODER (R)
18
19 TUNER Ⓗ
20
21 LINE Ⓗ
22 AUDIO IN (L)
23 AUDIO IN (R)
24 GND (AUDIO)
25 AUDIO OUT (L)
26 GND (AUDIO)
27 AUDIO OUT (R)
28 AUDIO IN (N)
29 REC VR (L)
30 TUNER AUDIO IN
31 REC VR (C)
32 REC VR (R)
33 AGC Ⓗ
34 REG -30V
35
VIDEO OUT
AUDIO OUT CH1 (L) CH2 (R)
VIDEO IN
AUDIO IN CH1 (L) CH2 (R)
L4905 100μ
L4906 100μ
R4902 2200
R4903 2200
C4903 100P
C4904 100P
R4908 470
C4907 0.018
C4908 0.018
R4909 470
L4901 1m
C4909 6800P
C4910 6800P
L4902 1m
R4904 100
R4905 100
R3901 75
R3902 75
R3903 4700
R3904 4700
C3901 16V22
C3902 16V22
C3903 16V22
R3905 100K
R3906 75
C3904 16V47
C3905 0.01
C3906 16V10
R3909 75
L4903 1m
R4917 470
C4914 6800P
C4916 0.018
C4913 6800P
C4915 0.018
L4904 1m
R4916 470
C4912 100P
C4911 100P
R4911 2200
R4910 2200
AV 21 PIN JACK
1 AUDIO OUT CH2
2 AUDIO IN CH2
3 AUDIO OUT CH1
4 AUDIO GND
5
6 AUDIO IN CH1
7
8 P.B +12V
9
10
11
12
13
14
15
16
17 GND
18
19 VIDEO OUT
20 VIDEO IN
21 GND
Q4901 2SD636 (VOLTAGE STABILIZER)
R4901 1500
C4901 16V100
C4902 16V100
C4917 50V1
C4918 50V1
C4925 50V2.2
C4924 50V2.2
R3910 75
R4913 220
R4912 220
R4918 220K
R4920 6800
R4919 6800
R4922 2200
R4923 2200
S3903 DBS/CANAL VSS0196
C4931 6.3V470
R3907 75
C4928 16V10
C4929 0.01
C4930 0.01
C4927 16V10
C4919 16V10
BUFFER
AGC
REG
VOLTAGE CONTROL
AGC SELECT
IC4901 M51132L
C4920 16V10
C4921 16V22
C4922 50V1
C4923 16V10
R3913 1K
FL3901 VLF0413 or ELB4H020
COLOUR
TEST
AUTO
S3901 VSS0162
L3901 100μ
R3908 100K
L3903 2.2μ
D3901 MA165
Q3901 2SC2206 (PHASE COMPENSATOR)
R3911 1500
C3907 16V10
R3912 3900
IC3902 BA7004
(TEST SIGNAL GENERATOR)
TEST SIG.
OSC 500KHz
VCC
GND
L3902 100μ
R3915 560
C3908 16V10
R3914 1500
C3909 16V10
X3901 VSX0099
C3910 0.0033
C3911 0.0033
J4901
1 -30V
2 VR IN CH2
3 IN LINE R (N)
4 IN LINE L (N)
5 VR IN CH1
6 12V (AUDIO)
7 IN TUNER (N)
8 AUDIO IN (N)
9 CH2 AV OUT
10 CH1 AV OUT
11 GND (A3)
12 P.B +12V
13 AV CH2 (IN)
14 AV CH1 (IN)
15 GND (V)
J4951-1 … J4951-15
J4902
16 CH2 (IN)
17 GND (A1)
18 CH1 (IN)
19 GND (A2)
20 LINE Ⓗ
21 TUNER Ⓗ
22 AV Ⓗ
23 CANAL/LINE L
24 CANAL/LINE R
25 TUNER CH2 (IN)
26 TUNER CH1 (IN)
27 TEST Ⓗ
28 REG 12V
29
30 EE Ⓗ
J4952-16 … J4952-30
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173R)

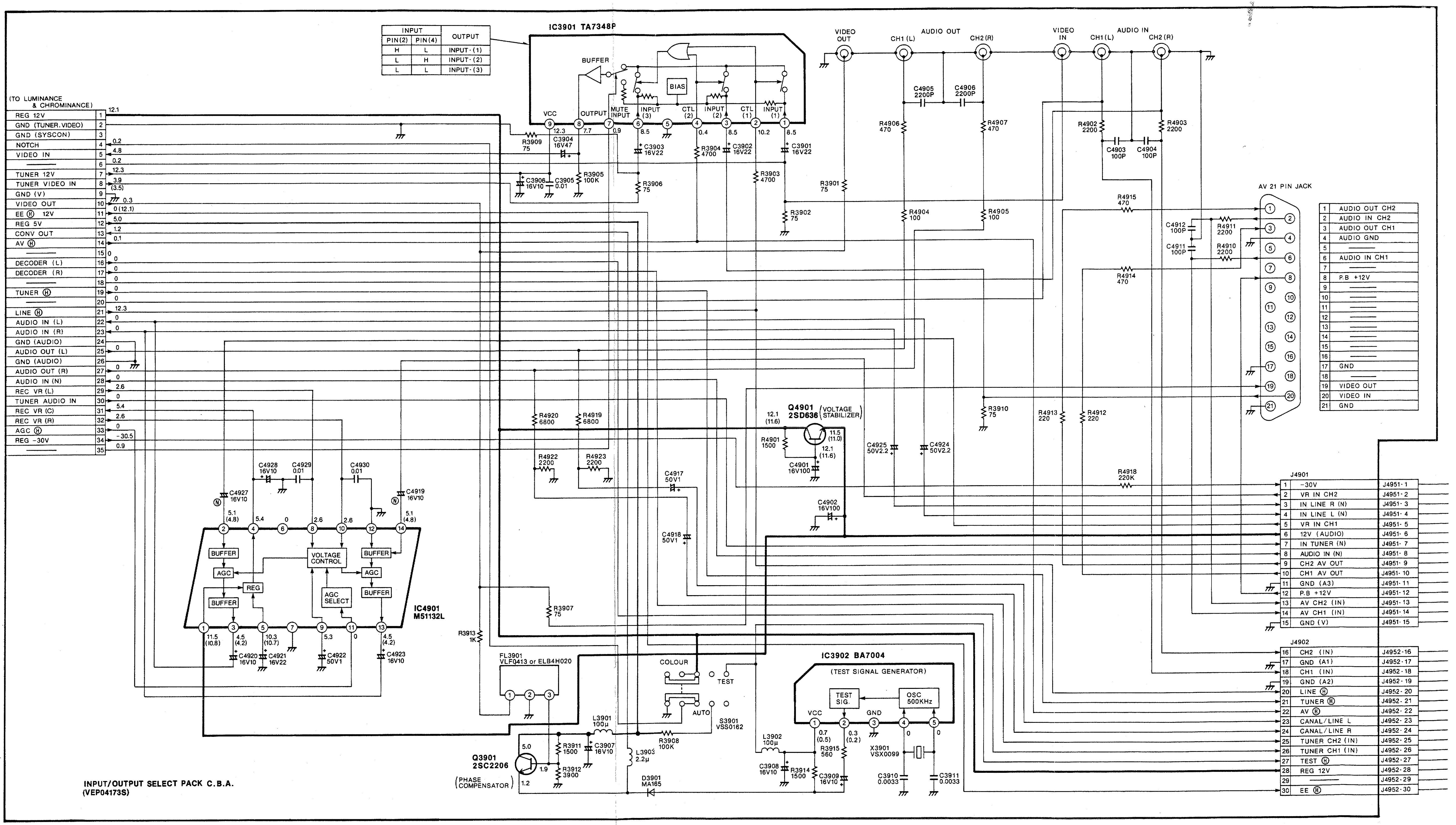
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe“, ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play“, ( )≙ Record (S-VHS : SP Mode).

Schaltbild Eingangs-/Ausgangsteil (EGC)
Input/Output Pack and Sub Input/Output Schematic Diagram (EGC)


J4951
J4901-1 -30V
J4901-2 VR IN CH2
J4901-3 IN LINE R (N)
J4901-4 IN LINE L (N)
J4901-5 VR IN CH1
J4901-6 12V (AUDIO)
J4901-7 IN TUNER (N)
J4901-8 AUDIO (MIXOUT)
J4901-9 CH2 AV OUT
J4901-10 CH1 AV OUT
J4901-11 GND (A3)
J4901-12 PB +12V
J4901-13 AV CH2 (IN)
J4901-14 AV CH1 (IN)
J4901-15 GND (V)
1 AUDIO OUT CH2
2 AUDIO IN CH2
3 AUDIO OUT CH1
4 AUDIO GND
6 AUDIO IN CH1
8 P.B +12V
17 GND
19 VIDEO OUT
20 VIDEO IN
21 GND
J4952
J4902-16 CH 2 (IN)
J4902-17 GND (A1)
J4902-18 CH 1 (IN)
J4902-19 GND (A2)
J4902-20 LINE Ⓗ
J4902-21 TUNER Ⓗ
J4902-22 AV Ⓗ
J4902-23 CANAL / LINE L
J4902-24 CANAL / LINE R
J4902-25 TUNER CH2 (IN)
J4902-26 TUNER CH1 (IN)
J4902-27 TEST Ⓗ
J4902-28 REG 12V
J4902-29
J4902-30 EE Ⓗ
P4951 (TO OPERATION)
P6504-1 MIC IN
P6504-2 GND
P6504-3 MIC Ⓗ
P6504-4 AUDIO 12V
J4951-1 … J4951-15
J4952-16 … J4952-30
IC4951
μPD4052
(INPUT SELECT SW)
OUTPUT CTL
LEVEL CONVERTER
X2 X1 X X0 X3
Y0 Y2 Y Y3 Y1
C4953 16V33
R4966 470K
R4967 470K
R4954 47K
R4955 47K
R4959 27K
R4951 4700
C4951 0.01
C4952 10V 100
R4952 4700
R4953 15K
R4960 68K
R4965 15K
R4964 15K
R4969 470K
R4970 470K
R4957 47K
R4956 47K
R4961 15K
R4962 15K
R4963 15K
R4968 68K
C4954 10V33
D4951 RD6.2JB
R4958 27K
R4973 56K
D4954 MA165
D4955 MA165
D4952 MA165
D4953 MA165
R4971 680K
R4972 680K
D3951 MA165
IC4952
AN6558
C4955 16V10
C4960 16V10
R4996 12K
C4957 16V33
R4974 39K
R4975 470K
R4976 39K
R4977 12K
C4959 16V33
R4978 470K
R4979 47K
C4961 16V10
C4964 16V10
R4981 12K
R4980 47K
VCC
GND
C4962 16V10
R4984 47K
R4983 12K
C4963 16V10
R4982 47K
IC4953
μPC4558
IC 3951
μPD4001
R3955 680K
R3953 5600
R3951 75
R3954 680K
Q3951
2SB641
(P.B. : ON)
C3951 0.1
R3952 5600
VDD
VSS
IC4954
M5201L
CTL INA GND OUT INB VCC
C4970 50V2.2
R4987 120K
C4966 47P
R4989 120K
R4990 47K
R4992 47K
C4967 16V33
R4991 47K
R4985 470K
R4986 470K
C4965 25V3.3
R4988 100K
C4968 2200P
D4957 MA165
D4958 MA165
D4956 MA165
R4995 39K
C4969 6V47
R4994 6800
R4993 47K
Q4951
2SD636
(INV)
SUB INPUT/OUTPUT SELECT PACK C.B.A.
(VEP04174H)

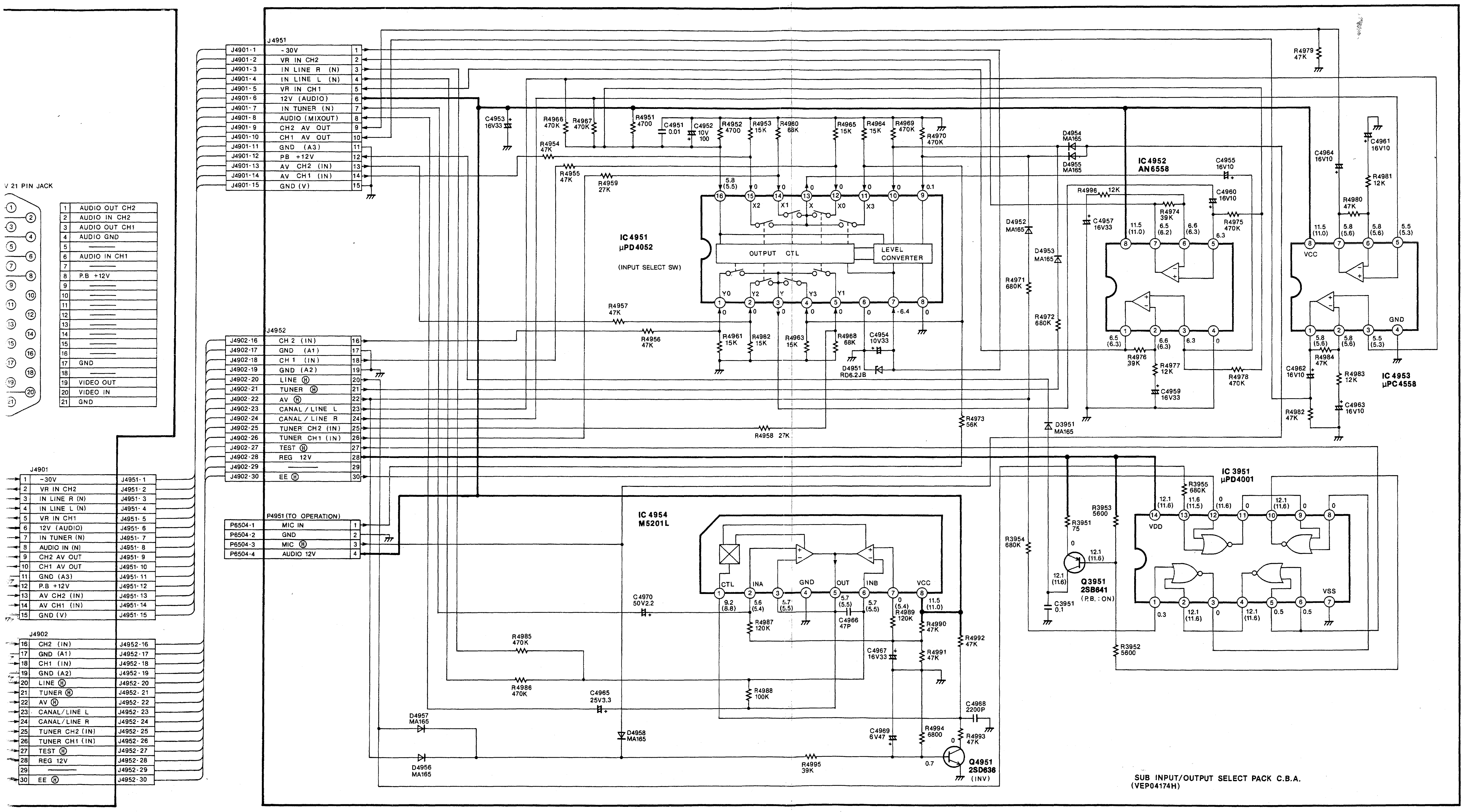
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Schaltbild Eingangs-/Ausgangsteil (ECV)
Input/Output pack and Sub Input/Output Schematic Diagram (ECV)


INPUT PIN(2) PIN(4) OUTPUT
H L INPUT·(1)
L H INPUT·(2)
L L INPUT·(3)
IC3901 TA7348P
BUFFER
BIAS
VCC
OUTPUT
MUTE INPUT
INPUT (3)
CTL (2)
INPUT (2)
CTL (1)
INPUT (1)
(TO LUMINANCE & CHROMINANCE)
1 REG 12V
2 GND (TUNER.VIDEO)
3 GND (SYSCON)
4 NOTCH
5 VIDEO IN
6 ———
7 TUNER 12V
8 TUNER VIDEO IN
9 GND (V)
10 VIDEO OUT
11 EE Ⓗ 12V
12 REG 5V
13 CONV OUT
14 AV Ⓗ
15 ———
16 DECODER (L)
17 DECODER (R)
18 ———
19 TUNER Ⓗ
20 ———
21 LINE Ⓗ
22 AUDIO IN (L)
23 AUDIO IN (R)
24 GND (AUDIO)
25 AUDIO OUT (L)
26 GND (AUDIO)
27 AUDIO OUT (R)
28 AUDIO IN (N)
29 REC VR (L)
30 TUNER AUDIO IN
31 REC VR (C)
32 REC VR (R)
33 AGC Ⓗ
34 REG -30V
35 ———
VIDEO OUT
AUDIO OUT
CH1 (L)
CH2 (R)
VIDEO IN
AUDIO IN
CH1 (L)
CH2 (R)
C4905 2200P
C4906 2200P
R4906 470
R4907 470
R4902 2200
R4903 2200
C4903 100P
C4904 100P
R3901 75
R4904 100
R4905 100
R4915 470
R4914 470
C4912 100P
C4911 100P
R4911 2200
R4910 2200
AV 21 PIN JACK
1 AUDIO OUT CH2
2 AUDIO IN CH2
3 AUDIO OUT CH1
4 AUDIO GND
5 ———
6 AUDIO IN CH1
7 ———
8 P.B +12V
9 ———
10 ———
11 ———
12 ———
13 ———
14 ———
15 ———
16 ———
17 GND
18 ———
19 VIDEO OUT
20 VIDEO IN
21 GND
R3909 75
C3904 16V47
C3903 16V22
R3904 4700
C3902 16V22
C3901 16V22
C3906 16V10
C3905 0.01
R3905 100K
R3906 75
R3903 4700
R3902 75
Q4901 2SD636 (VOLTAGE STABILIZER)
R4901 1500
C4901 16V100
C4925 50V2.2
C4924 50V2.2
R3910 75
R4913 220
R4912 220
R4918 220K
R4920 6800
R4919 6800
R4922 2200
R4923 2200
C4917 50V1
C4902 16V100
C4918 50V1
C4928 16V10
C4929 0.01
C4930 0.01
C4927 16V10
C4919 16V10
IC4901 M51132L
BUFFER
AGC
REG
VOLTAGE CONTROL
AGC SELECT
C4920 16V10
C4921 16V22
C4922 50V1
C4923 16V10
R3907 75
R3913 1K
FL3901 VLF0413 or ELB4H020
COLOUR
TEST
AUTO
S3901 VSS0162
L3901 100µ
R3911 1500
C3907 16V10
R3912 3900
R3908 100K
L3903 2.2µ
D3901 MA165
Q3901 2SC2206 (PHASE COMPENSATOR)
IC3902 BA7004
(TEST SIGNAL GENERATOR)
TEST SIG.
OSC 500KHz
VCC
GND
L3902 100µ
C3908 16V10
R3914 1500
R3915 560
C3909 16V10
X3901 VSX0099
C3910 0.0033
C3911 0.0033
J4901
1 -30V J4951·1
2 VR IN CH2 J4951·2
3 IN LINE R (N) J4951·3
4 IN LINE L (N) J4951·4
5 VR IN CH1 J4951·5
6 12V (AUDIO) J4951·6
7 IN TUNER (N) J4951·7
8 AUDIO IN (N) J4951·8
9 CH2 AV OUT J4951·9
10 CH1 AV OUT J4951·10
11 GND (A3) J4951·11
12 P.B +12V J4951·12
13 AV CH2 (IN) J4951·13
14 AV CH1 (IN) J4951·14
15 GND (V) J4951·15
J4902
16 CH2 (IN) J4952·16
17 GND (A1) J4952·17
18 CH1 (IN) J4952·18
19 GND (A2) J4952·19
20 LINE Ⓗ J4952·20
21 TUNER Ⓗ J4952·21
22 AV Ⓗ J4952·22
23 CANAL/LINE L J4952·23
24 CANAL/LINE R J4952·24
25 TUNER CH2 (IN) J4952·25
26 TUNER CH1 (IN) J4952·26
27 TEST Ⓗ J4952·27
28 REG 12V J4952·28
29 ——— J4952·29
30 EE Ⓗ J4952·30
INPUT/OUTPUT SELECT PACK C.B.A. (VEP04173S)

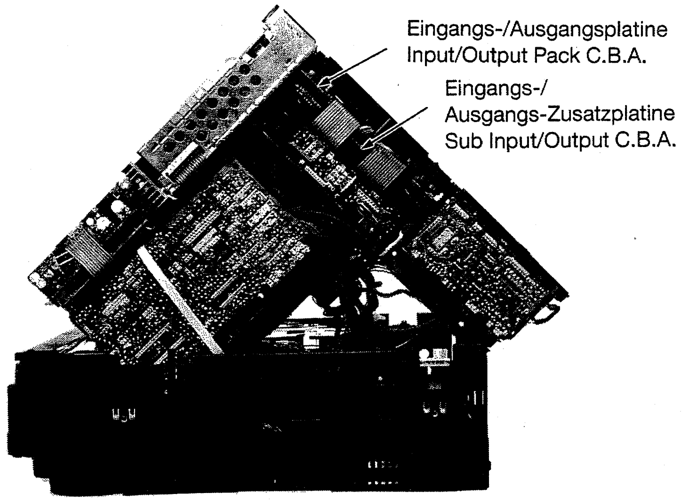
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

Schaltbild Eingangs-/Ausgangsteil (ECV)
Input/Output pack and Sub Input/Output Schematic Diagram (ECV)

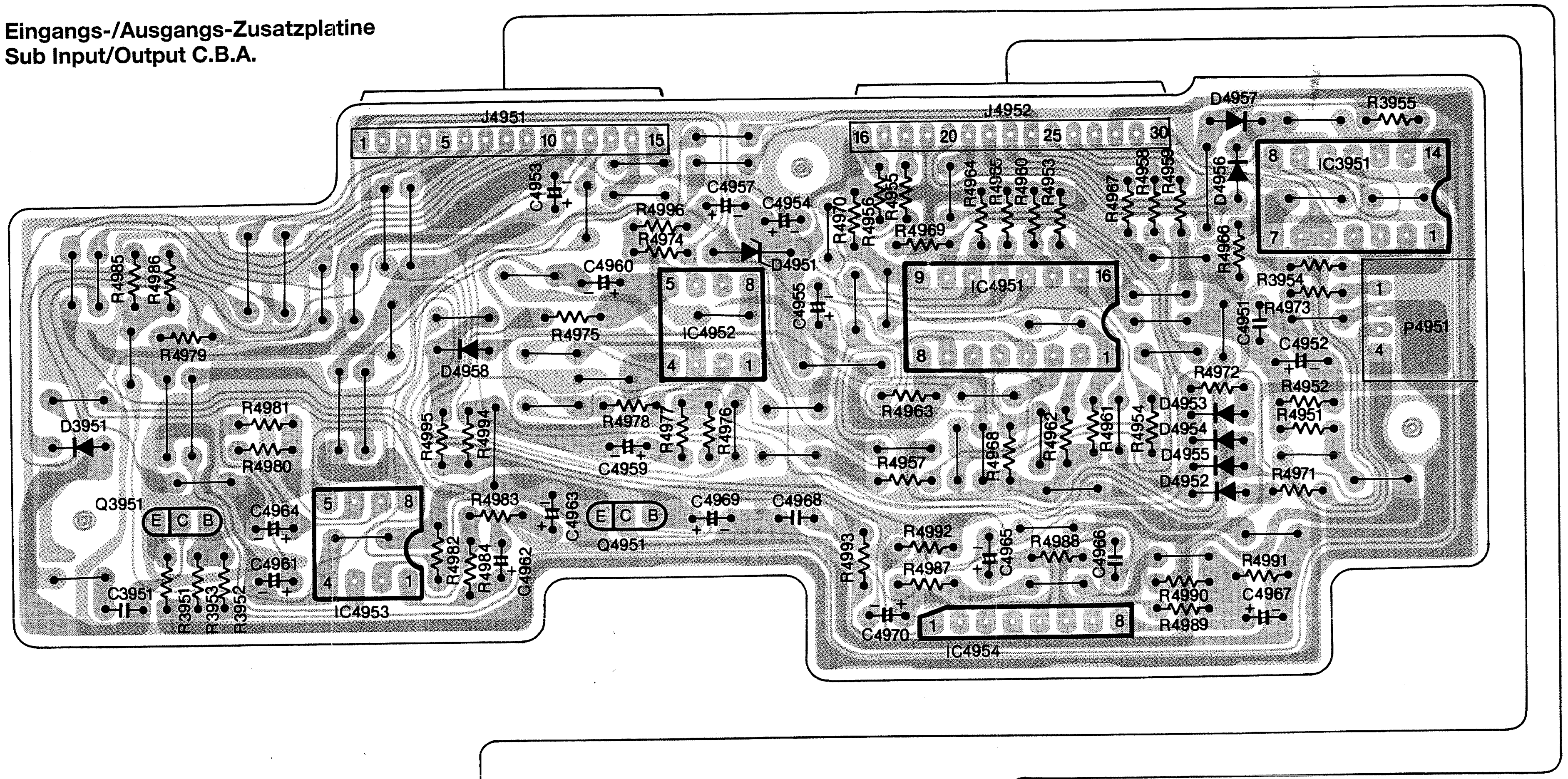

J4951
J4901-1 -30V
J4901-2 VR IN CH2
J4901-3 IN LINE R (N)
J4901-4 IN LINE L (N)
J4901-5 VR IN CH1
J4901-6 12V (AUDIO)
J4901-7 IN TUNER (N)
J4901-8 AUDIO (MIXOUT)
J4901-9 CH2 AV OUT
J4901-10 CH1 AV OUT
J4901-11 GND (A3)
J4901-12 PB +12V
J4901-13 AV CH2 (IN)
J4901-14 AV CH1 (IN)
J4901-15 GND (V)
21 PIN JACK
1 AUDIO OUT CH2
2 AUDIO IN CH2
3 AUDIO OUT CH1
4 AUDIO GND
6 AUDIO IN CH1
8 P.B +12V
17 GND
19 VIDEO OUT
20 VIDEO IN
21 GND
J4952
J4902-16 CH 2 (IN)
J4902-17 GND (A1)
J4902-18 CH 1 (IN)
J4902-19 GND (A2)
J4902-20 LINE Ⓗ
J4902-21 TUNER Ⓗ
J4902-22 AV Ⓗ
J4902-23 CANAL / LINE L
J4902-24 CANAL / LINE R
J4902-25 TUNER CH2 (IN)
J4902-26 TUNER CH1 (IN)
J4902-27 TEST Ⓗ
J4902-28 REG 12V
J4902-30 EE Ⓗ
P4951 (TO OPERATION)
P6504-1 MIC IN
P6504-2 GND
P6504-3 MIC Ⓗ
P6504-4 AUDIO 12V
IC4951 µPD4052 (INPUT SELECT SW)
OUTPUT CTL
LEVEL CONVERTER
IC4952 AN6558
IC4953 µPC4558
IC4954 M5201L
CTL INA GND OUT INB VCC
IC3951 µPD4001
VDD VSS
Q3951 2SB641 (P.B. : ON)
Q4951 2SD636 (INV)
D4951 RD6.2JB
SUB INPUT/OUTPUT SELECT PACK C.B.A. (VEP04174H)

Für Werte ohne Bezeichnung F (µF) oder Ω einsetzen.
Read F (µF) or Ω respectively unless otherwise noted.

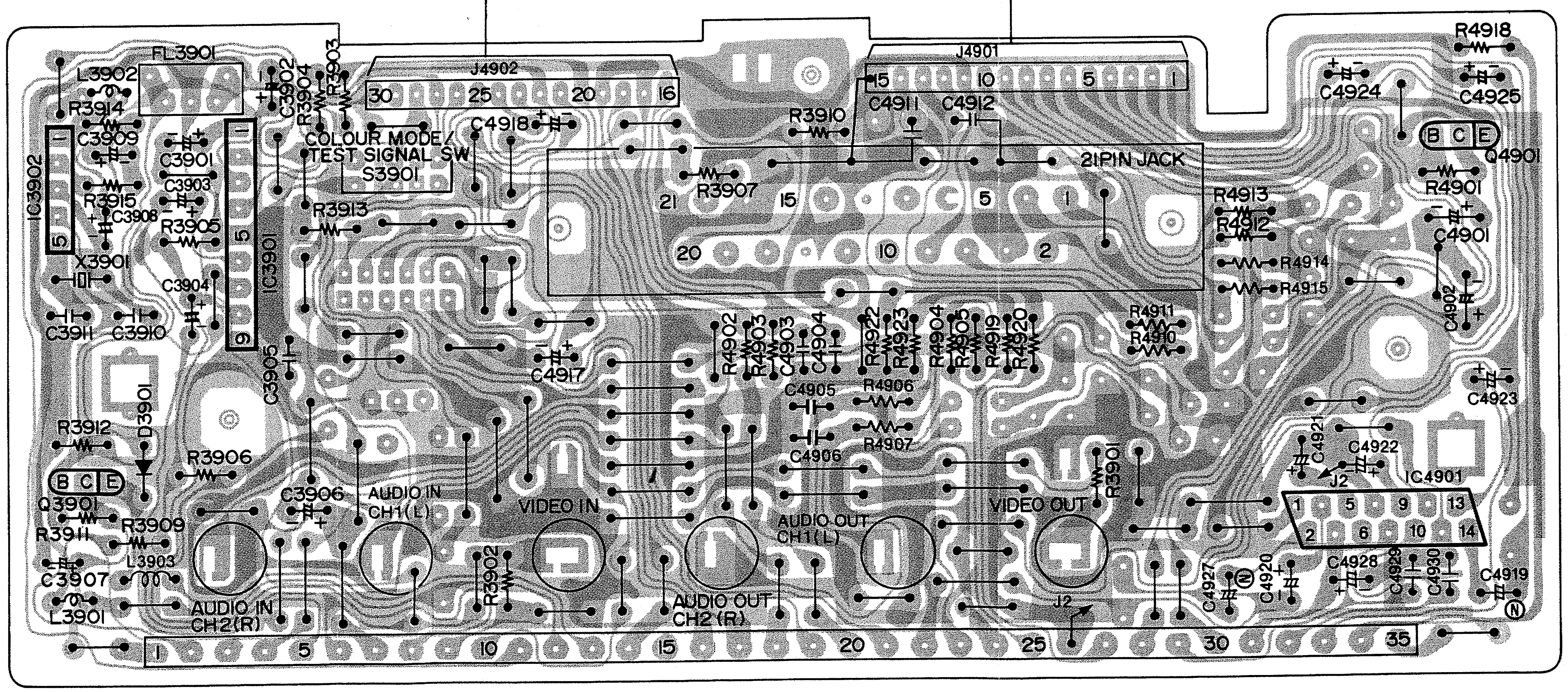
Eingangs/Ausgangsplatinen (ECV)
Input/Output C.B.A.'s (ECV)


Eingangs-/Ausgangsplatine
Input/Output Pack C.B.A.
Eingangs-/
Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.

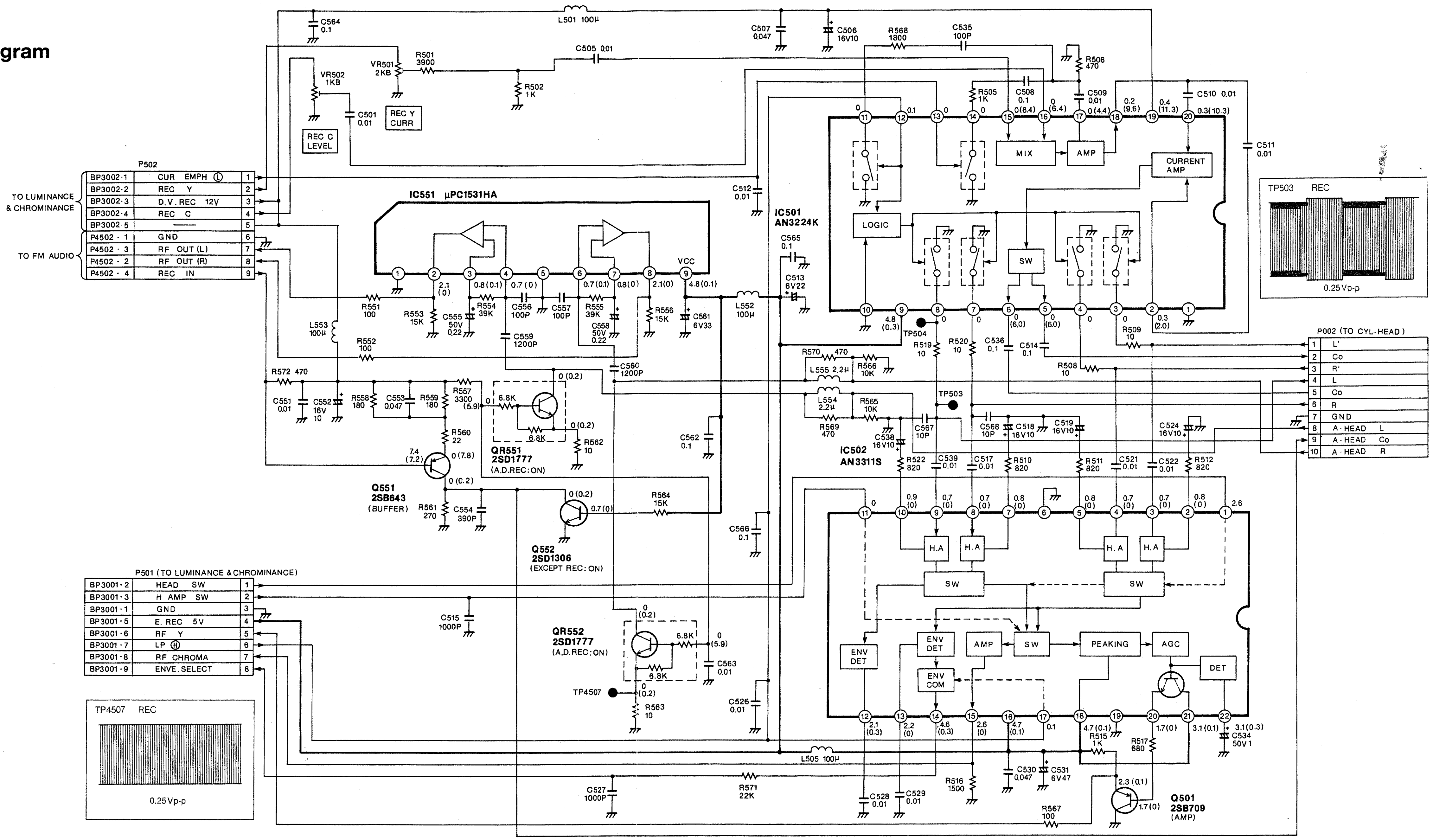
Eingangs-/Ausgangs-Zusatzplatine
Sub Input/Output C.B.A.


J4951
J4952
IC3951
IC4951
IC4952
IC4953
IC4954
P4951
Q3951
Q4951
D3951
D4951
D4952
D4953
D4954
D4955
D4956
D4957
D4958
R3954
R3955
C3951
C4952
C4953
C4954
C4955
C4957
C4959
C4960
C4961
C4964
C4967
C4968
C4969
C4970

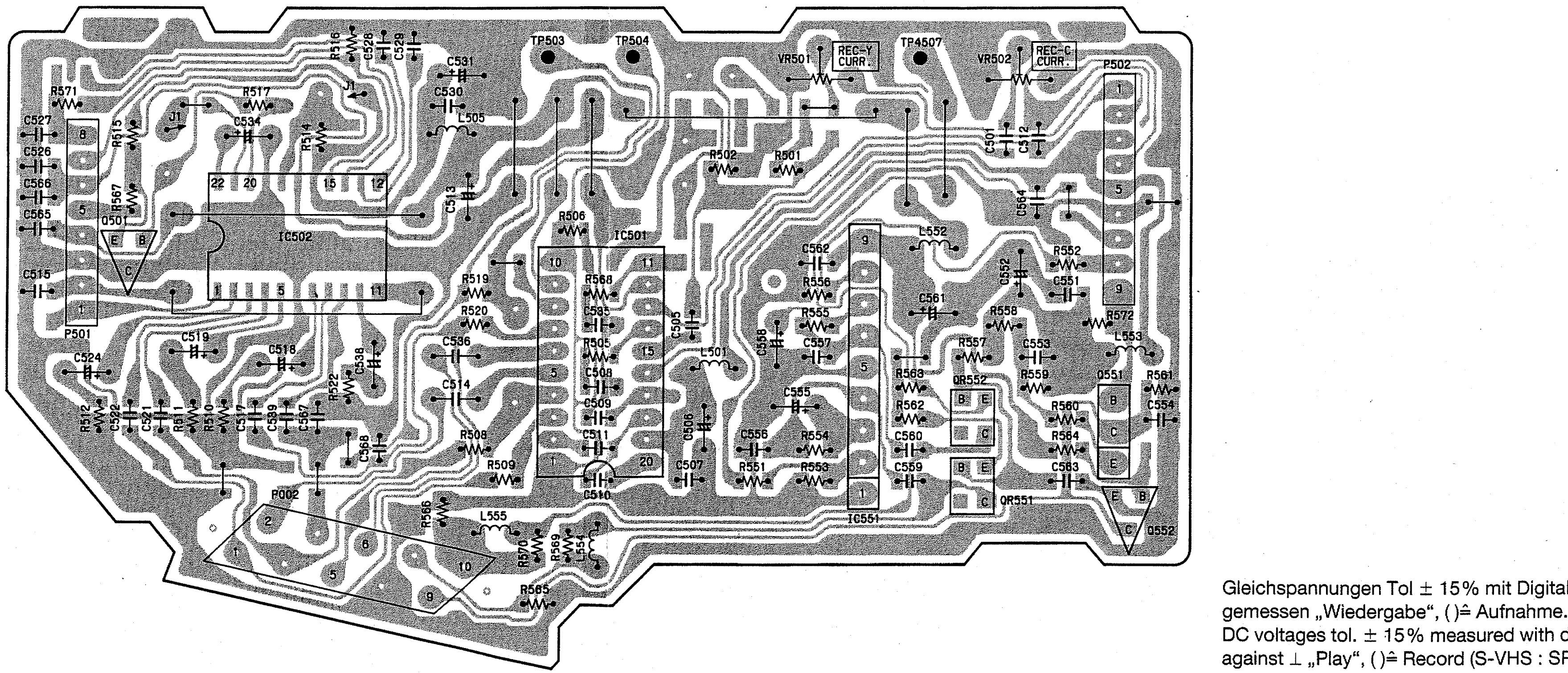
Eingangs-Ausgangsplatine
Input/Output Pack C.B.A.


J4901
J4902
FL3901
IC3901
IC3902
IC4901
COLOUR MODE/
TEST SIGNAL SW
S3901
21PIN JACK
X3901
L3901
L3902
L3903
Q3901
Q4901
D3901
AUDIO IN
CH1(L)
AUDIO IN
CH2(R)
VIDEO IN
AUDIO OUT
CH1(L)
AUDIO OUT
CH2(R)
VIDEO OUT
J2
R4918
C4924
C4925
R4901
C4901
C4923

Schaltbild Kopfverstärker
Head Amp Schematic Diagram

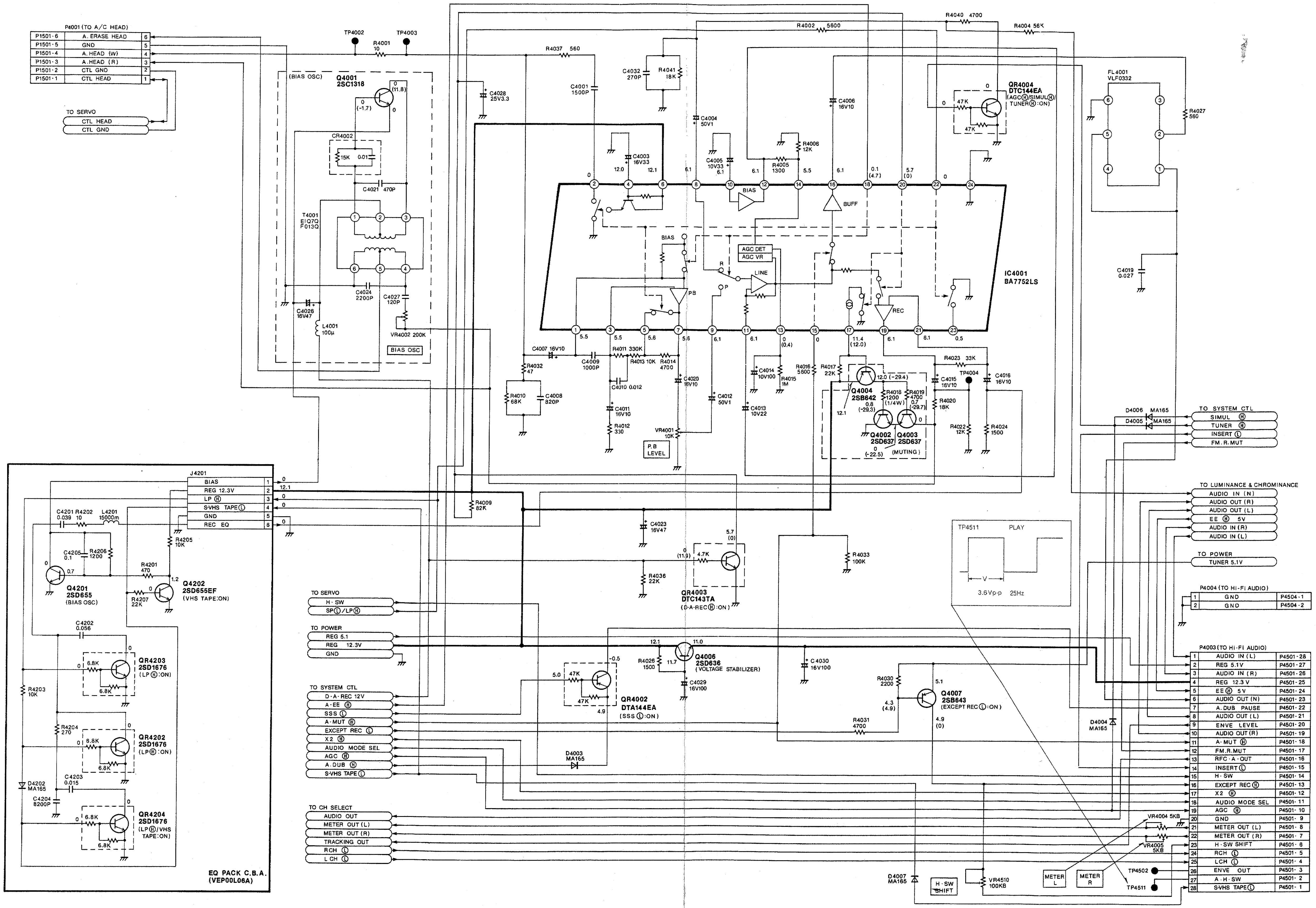

IC551 µPC1531HA
IC501 AN3224K
IC502 AN3311S
Q551 2SB643 (BUFFER)
Q552 2SD1306 (EXCEPT REC: ON)
QR551 2SD1777 (A.D.REC: ON)
QR552 2SD1777 (A.D.REC: ON)
Q501 2SB709 (AMP)
P502
TO LUMINANCE & CHROMINANCE
TO FM AUDIO
BP3002-1 CUR EMPH (L)
BP3002-2 REC Y
BP3002-3 D.V.REC 12V
BP3002-4 REC C
BP3002-5
P4502-1 GND
P4502-3 RF OUT (L)
P4502-2 RF OUT (R)
P4502-4 REC IN
P501 (TO LUMINANCE & CHROMINANCE)
BP3001-2 HEAD SW
BP3001-3 H AMP SW
BP3001-1 GND
BP3001-5 E. REC 5V
BP3001-6 RF Y
BP3001-7 LP (H)
BP3001-8 RF CHROMA
BP3001-9 ENVE. SELECT
P002 (TO CYL. HEAD)
1 L'
2 Co
3 R'
4 L
5 Co
6 R
7 GND
8 A·HEAD L
9 A·HEAD Co
10 A·HEAD R
REC C LEVEL
REC Y CURR
LOGIC
MIX
AMP
CURRENT AMP
SW
H.A
ENV DET
ENV COM
PEAKING
AGC
DET
VCC
TP503 REC
0.25Vp-p
TP4507 REC
0.25Vp-p
TP504
L501 100µ
L505 100µ
L552 100µ
L553 100µ

Platine Kopfverstärker
Head Amp Circuit Board


TP503
TP504
TP4507
VR501
REC-Y CURR.
VR502
REC-C CURR.
P502
P501
P002
IC502
IC501
IC551
Q501
QR552
QR551
Q551
Q552

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥ gemessen „Wiedergabe", ( )≙ Aufnahme. (S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ „Play", ( )≙ Record (S-VHS : SP Mode).

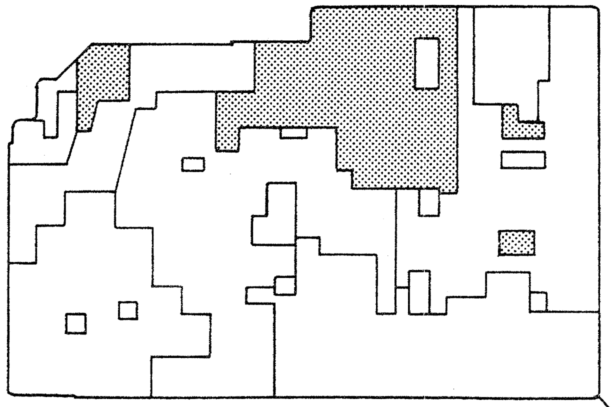
Schaltbild Tonteil
Audio Schematic Diagram

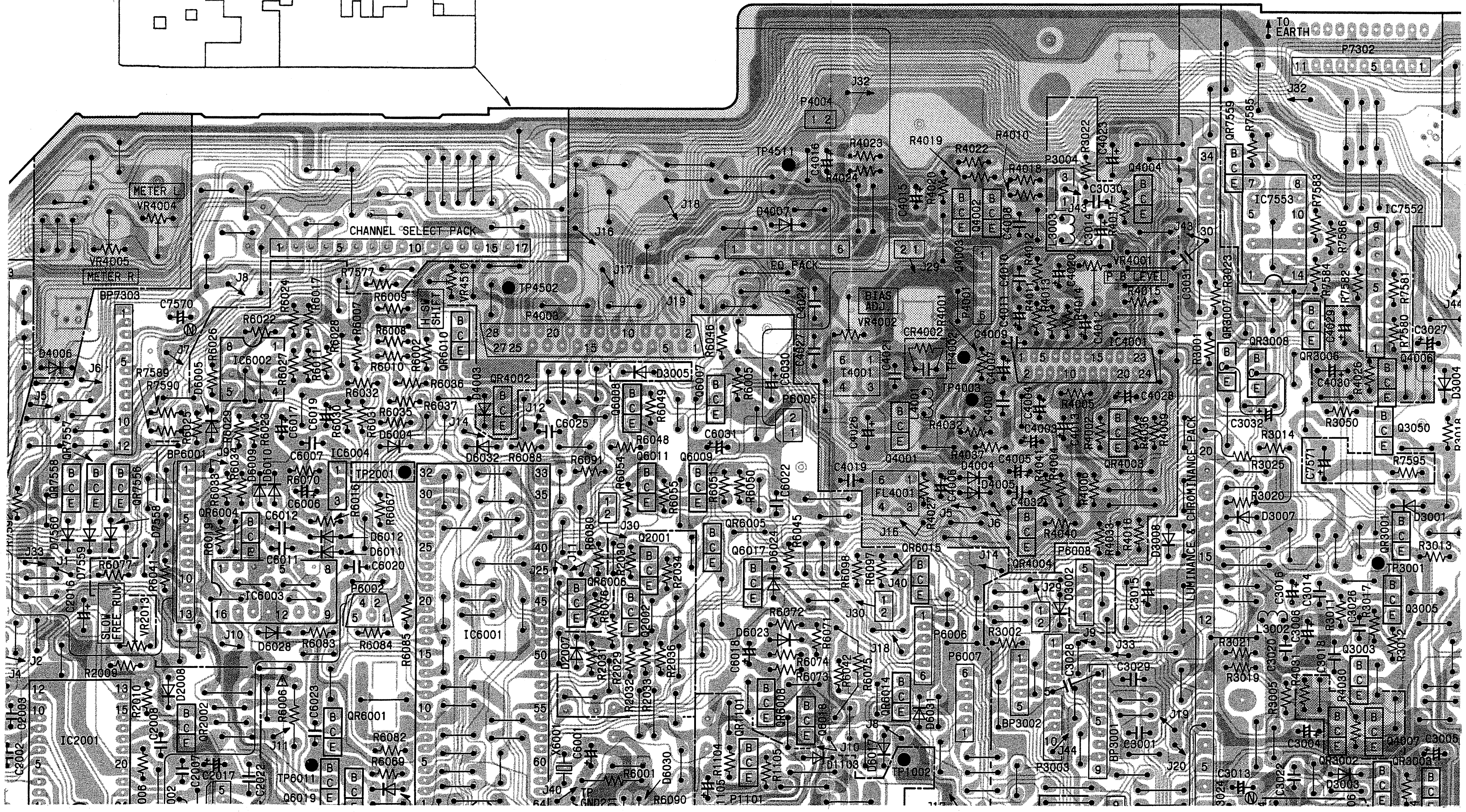

P4001 (TO A/C HEAD)
P1501-6 A. ERASE HEAD
P1501-5 GND
P1501-4 A. HEAD (W)
P1501-3 A. HEAD (R)
P1501-2 CTL GND
P1501-1 CTL HEAD
TO SERVO
CTL HEAD
CTL GND
TP4002
TP4003
R4001 10
(BIAS OSC)
Q4001 2SC1318
CR4002
T4001 EIQ7Q F013Q
C4024 2200P
C4027 120P
VR4002 200K
BIAS OSC
L4001 100μ
C4026 16V47
R4037 560
C4001 1500P
C4028 25V3.3
C4032 270P
R4041 18K
R4002 5600
R4040 4700
R4004 56K
QR4004 DTC144EA (AGC Ⓗ/SIMUL Ⓗ/TUNER Ⓗ:ON)
FL4001 VLF0332
R4027 560
IC4001 BA7752LS
BIAS
AGC DET
AGC VR
LINE
PB
REC
BUFF
C4019 0.027
Q4004 2SB642
Q4002 2SD637
Q4003 2SD637
(MUTING)
TP4004
VR4001 10K
P.B LEVEL
D4006 MA165
D4005 MA165
TO SYSTEM CTL
SIMUL Ⓗ
TUNER Ⓗ
INSERT Ⓛ
FM.R.MUT
J4201
BIAS
REG 12.3V
LP Ⓗ
S-VHS TAPE Ⓛ
GND
REC EQ
Q4201 2SD655 (BIAS OSC)
Q4202 2SD655EF (VHS TAPE:ON)
QR4203 2SD1676 (LP Ⓗ:ON)
QR4202 2SD1676 (LP Ⓗ:ON)
QR4204 2SD1676 (LP Ⓗ/VHS TAPE:ON)
EQ PACK C.B.A. (VEP00L06A)
TO LUMINANCE & CHROMINANCE
AUDIO IN (N)
AUDIO OUT (R)
AUDIO OUT (L)
EE Ⓗ 5V
AUDIO IN (R)
AUDIO IN (L)
TO POWER
TUNER 5.1V
TP4511 PLAY
3.6Vp-p 25Hz
QR4003 DTC143TA (D-A-REC Ⓗ:ON)
R4033 100K
R4009 82K
TO SERVO
H-SW
SP Ⓛ/LP Ⓗ
TO POWER
REG 5.1
REG 12.3V
GND
Q4006 2SD636 (VOLTAGE STABILIZER)
QR4002 DTA144EA (SSS Ⓛ:ON)
Q4007 2SB643 (EXCEPT REC Ⓛ:ON)
TO SYSTEM CTL
D-A-REC 12V
A-EE Ⓗ
SSS Ⓛ
A-MUT Ⓗ
EXCEPT REC Ⓛ
X2 Ⓗ
AUDIO MODE SEL
AGC Ⓗ
A-DUB Ⓗ
S-VHS TAPE Ⓛ
D4003 MA165
TO CH SELECT
AUDIO OUT
METER OUT (L)
METER OUT (R)
TRACKING OUT
RCH Ⓛ
LCH Ⓛ
P4004 (TO HI-FI AUDIO)
1 GND P4504-1
2 GND P4504-2
P4003 (TO HI-FI AUDIO)
1 AUDIO IN (L) P4501-28
2 REG 5.1V P4501-27
3 AUDIO IN (R) P4501-26
4 REG 12.3V P4501-25
5 EE Ⓗ 5V P4501-24
6 AUDIO OUT (N) P4501-23
7 A.DUB PAUSE P4501-22
8 AUDIO OUT (L) P4501-21
9 ENVE LEVEL P4501-20
10 AUDIO OUT (R) P4501-19
11 A-MUT Ⓗ P4501-18
12 FM.R.MUT P4501-17
13 RFC-A-OUT P4501-16
14 INSERT Ⓛ P4501-15
15 H-SW P4501-14
16 EXCEPT REC Ⓗ P4501-13
17 X2 Ⓗ P4501-12
18 AUDIO MODE SEL P4501-11
19 AGC Ⓗ P4501-10
20 GND P4501-9
21 METER OUT (L) P4501-8
22 METER OUT (R) P4501-7
23 H-SW SHIFT P4501-6
24 RCH Ⓛ P4501-5
25 LCH Ⓛ P4501-4
26 ENVE OUT P4501-3
27 A-H-SW P4501-2
28 S-VHS TAPE Ⓛ P4501-1
VR4004 5KB
VR4005 5KB
D4004 MA165
D4007 MA165
H-SW SHIFT
VR4510 100KB
METER L
METER R
TP4502
TP4511

Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥
gemessen „Wiedergabe“, ( )≙ Aufnahme. (AUDIO IN : -10 dB/1 KHz, S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter
against ⊥ „Play“, ( )≙ Record (AUDIO IN : -10 dB/1 KHz, S-VHS : SP Mode).

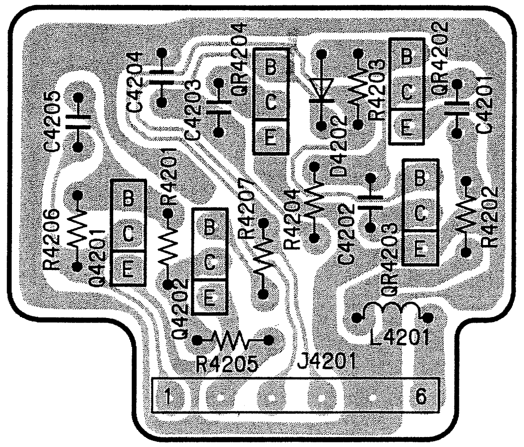
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Tonteil auf der Hauptplatine
Audio Section on Main C.B.A.

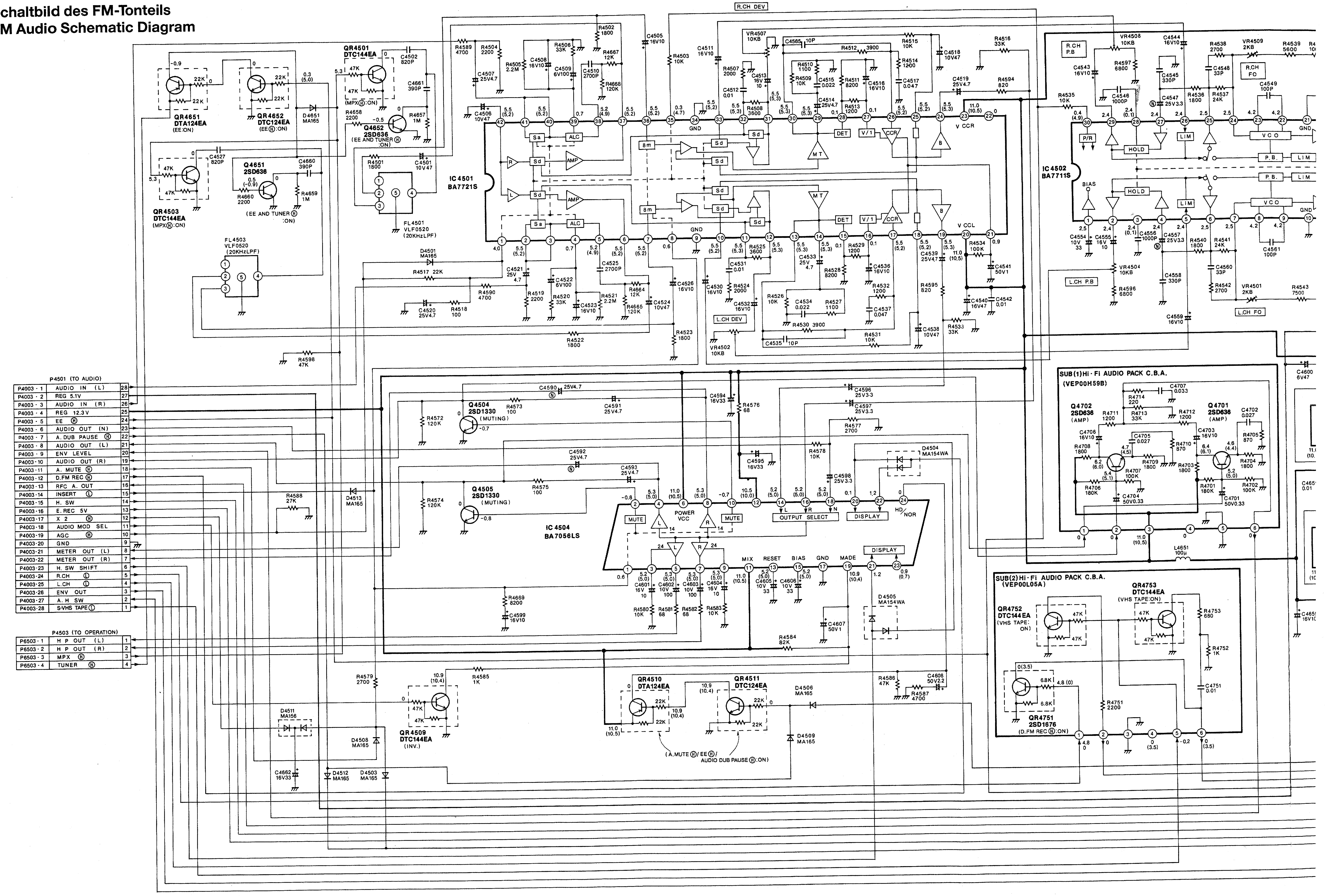



METER L
VR4004
VR4005
METER R
CHANNEL SELECT PACK
EQ PACK
BIAS ADJ
VR4002
P.B LEVEL
VR4001
H-SW SHIFT
VR4510
SLOW FREE RUN
VR2013
LUMINANCE & CHROMINANCE PACK
TO EARTH
P7302
P4004
P4008
TP4511
TP4502
TP4003
TP2001
TP6011
TP1002
TP3001
IC6001
IC6002
IC6003
IC6004
IC2001
IC4001
IC7552
IC7553
FL4001
T4001
J32
J16
J17
J18
J19
J29
BP7303
BP6001
BP3002
D4006
D4007
D3005
D3007
D3001
D3004
CR4002
Q4001
Q4002
Q4004
Q4006
Q3005
Q3050
QR4002
QR4003
QR4004
QR6015
QR3008
QR3006
QR3001
C7570
C6025
C4019
R7577
R6022
R6077
R2009

EQ-Platine
EQ Pack C.B.A.

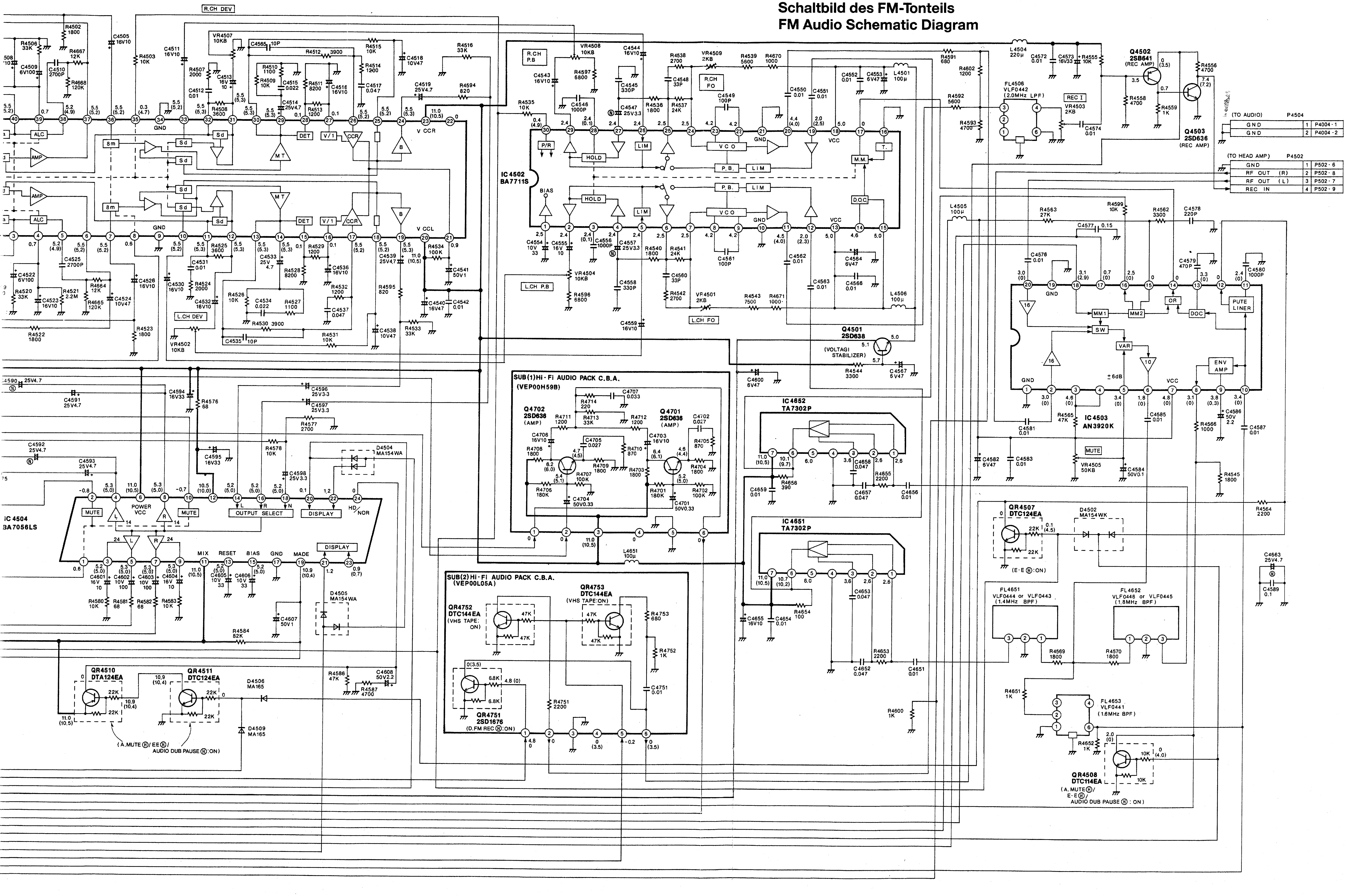

C4205
C4204
C4203
QR4204
D4202
R4203
QR4202
C4201
R4206
Q4201
R4201
Q4202
R4207
R4204
C4202
QR4203
R4202
R4205
J4201
L4201
1
6
B
C
E

Schaltbild des FM-Tonteils
FM Audio Schematic Diagram


IC4501 BA7721S
IC4502 BA7711S
IC4504 BA7056LS
QR4651 DTA124EA (EE:ON)
QR4652 DTC124EA (EE Ⓗ:ON)
QR4501 DTC144EA (MPX Ⓗ:ON)
Q4652 2SD636 (EE AND TUNER Ⓗ :ON)
QR4503 DTC144EA (MPX Ⓗ:ON)
Q4651 2SD636 (EE AND TUNER Ⓗ :ON)
FL4501 VLF0520 (20KHzLPF)
FL4503 VLF0520 (20KHzLPF)
Q4504 2SD1330 (MUTING)
Q4505 2SD1330 (MUTING)
QR4509 DTC144EA (INV.)
QR4510 DTA124EA
QR4511 DTC124EA
(A.MUTE Ⓗ/ EE Ⓗ/ AUDIO DUB PAUSE Ⓗ:ON)
SUB(1)Hi-Fi AUDIO PACK C.B.A. (VEP00H59B)
Q4702 2SD636 (AMP)
Q4701 2SD636 (AMP)
SUB(2)Hi-Fi AUDIO PACK C.B.A. (VEP00L05A)
QR4752 DTC144EA (VHS TAPE: ON)
QR4753 DTC144EA (VHS TAPE:ON)
QR4751 2SD1676 (D.FM REC Ⓗ:ON)
R.CH DEV
L.CH DEV
R.CH P.B
L.CH P.B
R.CH FO
L.CH FO
P4501 (TO AUDIO)
P4003-1 AUDIO IN (L) 28
P4003-2 REG 5.1V 27
P4003-3 AUDIO IN (R) 26
P4003-4 REG 12.3V 25
P4003-5 EE Ⓗ 24
P4003-6 AUDIO OUT (N) 23
P4003-7 A.DUB PAUSE Ⓗ 22
P4003-8 AUDIO OUT (L) 21
P4003-9 ENV LEVEL 20
P4003-10 AUDIO OUT (R) 19
P4003-11 A. MUTE Ⓗ 18
P4003-12 D.FM REC Ⓗ 17
P4003-13 RFC A. OUT 16
P4003-14 INSERT Ⓛ 15
P4003-15 H. SW 14
P4003-16 E.REC 5V 13
P4003-17 X 2 Ⓗ 12
P4003-18 AUDIO MOD SEL 11
P4003-19 AGC Ⓗ 10
P4003-20 GND 9
P4003-21 METER OUT (L) 8
P4003-22 METER OUT (R) 7
P4003-23 H. SW SHIFT 6
P4003-24 R.CH Ⓛ 5
P4003-25 L.CH Ⓛ 4
P4003-26 ENV OUT 3
P4003-27 A. H SW 2
P4003-28 S-VHS TAPE Ⓛ 1
P4503 (TO OPERATION)
P6503-1 H P OUT (L) 1
P6503-2 H P OUT (R) 2
P6503-3 MPX Ⓗ 3
P6503-4 TUNER Ⓗ 4

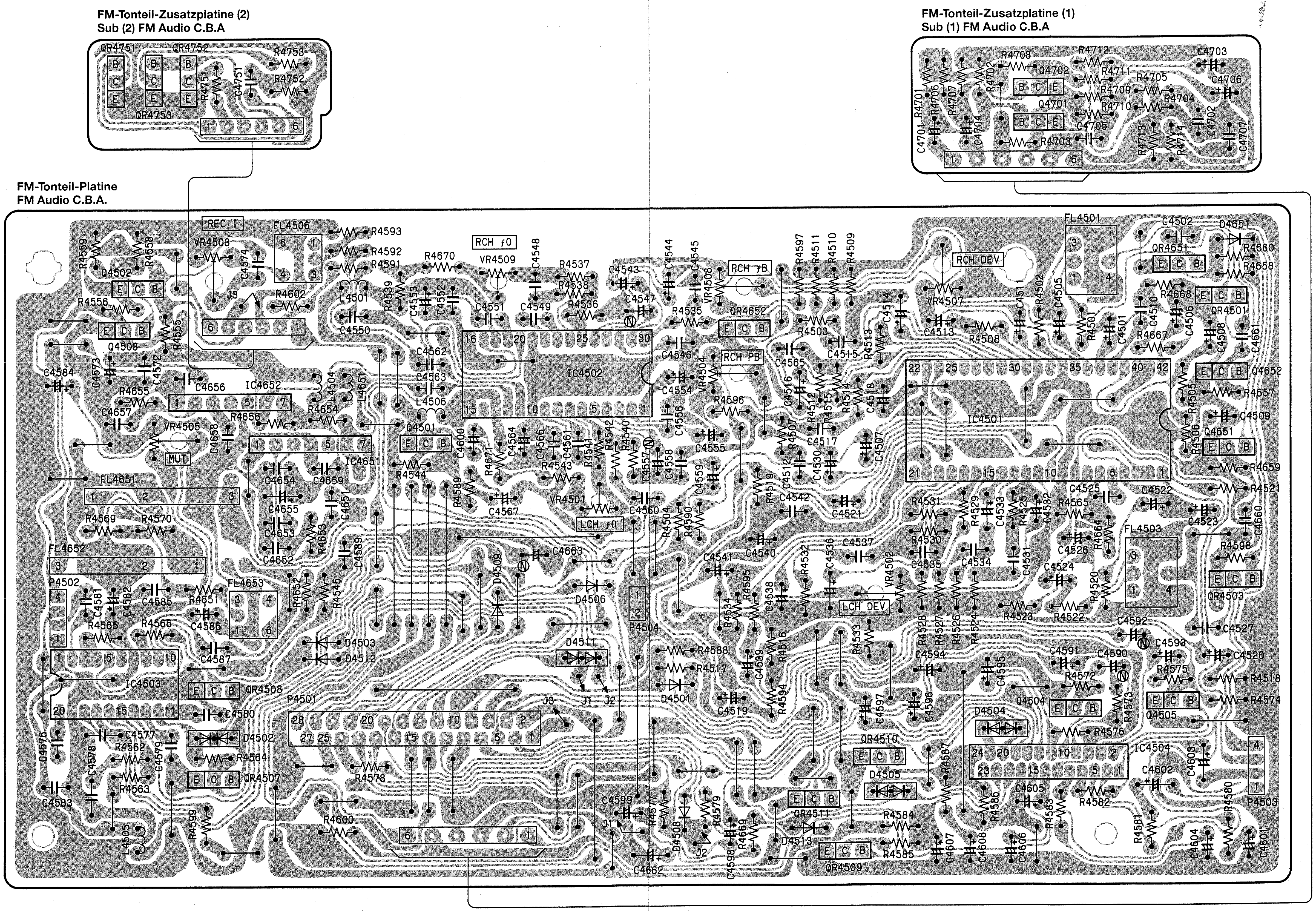
Gleichspannungen Tol ± 15% mit Digitalvoltmeter gegen ⊥
gemessen „Wiedergabe“, ( )≙ Aufnahme. (AUDIO IN : -10 dB/1 KHz, S-VHS : SP-Mode).
DC voltages tol. ± 15% measured with digital voltmeter
against ⊥ „Play“, ( )≙ Record (AUDIO IN : -10 dB/1 KHz, S-VHS : SP Mode).

Schaltbild des FM-Tonteils
FM Audio Schematic Diagram

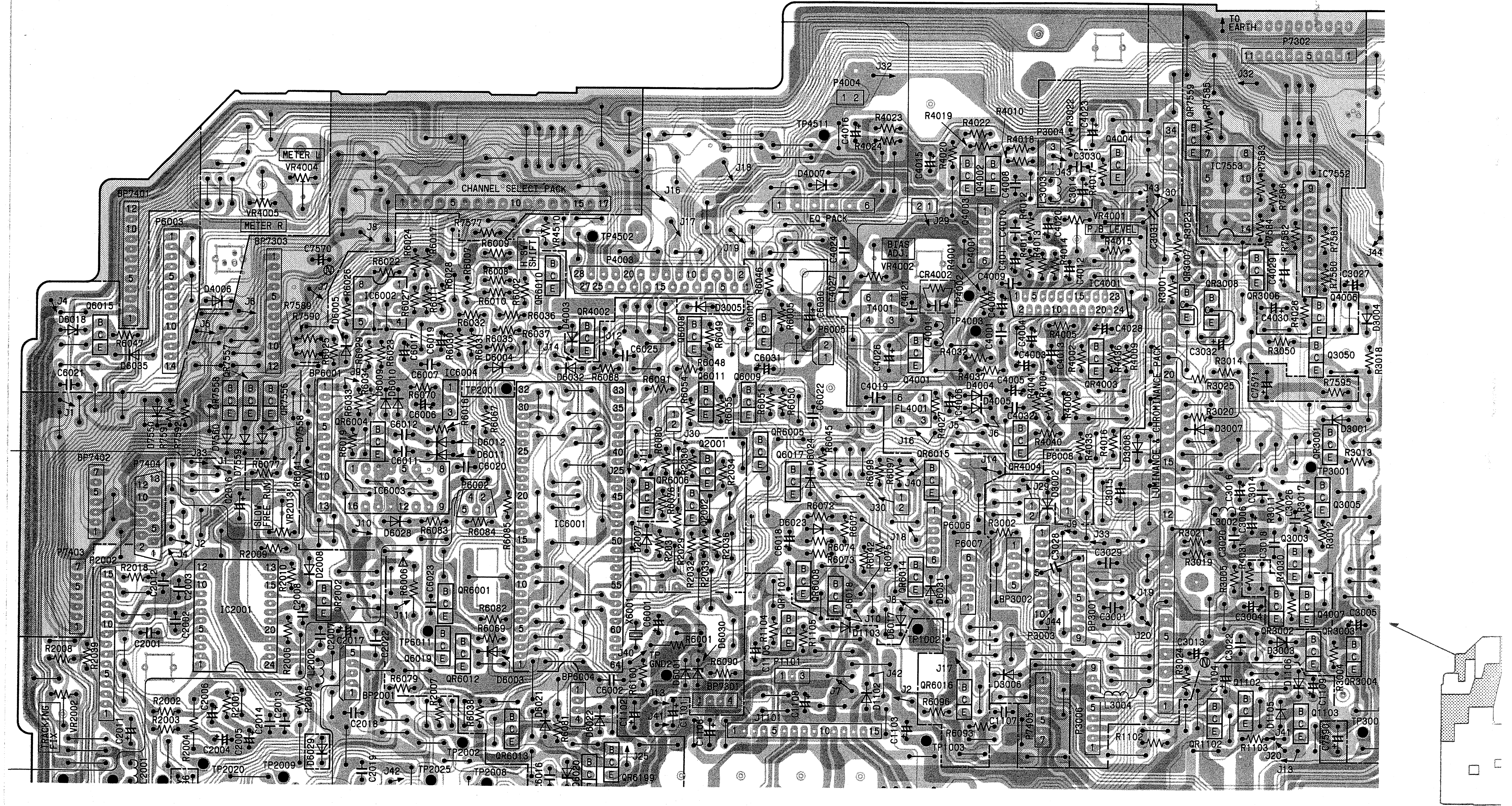

R.CH DEV
L.CH DEV
R.CH P.B
L.CH P.B
R.CH FO
L.CH FO
IC 4502
BA7711S
IC 4503
AN3920K
IC 4504
BA7056LS
IC 4651
TA7302P
IC 4652
TA7302P
Q4501
2SD638
(VOLTAGE STABILIZER)
Q4502
2SB641
(REC AMP)
Q4503
2SD636
(REC AMP)
SUB(1) Hi-Fi AUDIO PACK C.B.A.
(VEP00H59B)
Q4702
2SD636
(AMP)
Q4701
2SD636
(AMP)
SUB(2) Hi-Fi AUDIO PACK C.B.A.
(VEP00L05A)
QR4752
DTC144EA
(VHS TAPE: ON)
QR4753
DTC144EA
(VHS TAPE:ON)
QR4751
2SD1676
(D.FM REC Ⓗ:ON)
QR4507
DTC124EA
(E·E Ⓗ:ON)
QR4508
DTC114EA
(A. MUTE Ⓗ/ E·E Ⓗ/ AUDIO DUB PAUSE Ⓗ : ON)
QR4510
DTA124EA
QR4511
DTC124EA
(A.MUTE Ⓗ/ EE Ⓗ/ AUDIO DUB PAUSE Ⓗ:ON)
D4502
MA154WK
D4504
MA154WA
D4505
MA154WA
D4506
MA165
D4509
MA165
FL4506
VLF0442
(2.0MHz LPF)
FL4651
VLF0444 or VLF0443
(1.4MHz BPF)
FL4652
VLF0446 or VLF0445
(1.8MHz BPF)
FL4653
VLF0441
(1.8MHz BPF)
REC I
(TO AUDIO) P4504
GND 1 P4004-1
GND 2 P4004-2
(TO HEAD AMP) P4502
GND 1 P502-6
RF OUT (R) 2 P502-8
RF OUT (L) 3 P502-7
REC IN 4 P502-9
ALC
AMP
8m
Sd
DET
V/I
CCR
M T
B
V CCR
V CCL
GND
P/R
HOLD
LIM
VCO
P.B.
M.M.
D.O.C
T.
BIAS
VCC
MM1
MM2
OR
DOC
PULSE LINER
SW
VAR
ENV AMP
MUTE
±6dB
POWER VCC
OUTPUT SELECT
DISPLAY
HD/NOR
MIX
RESET
BIAS
GND
MADE

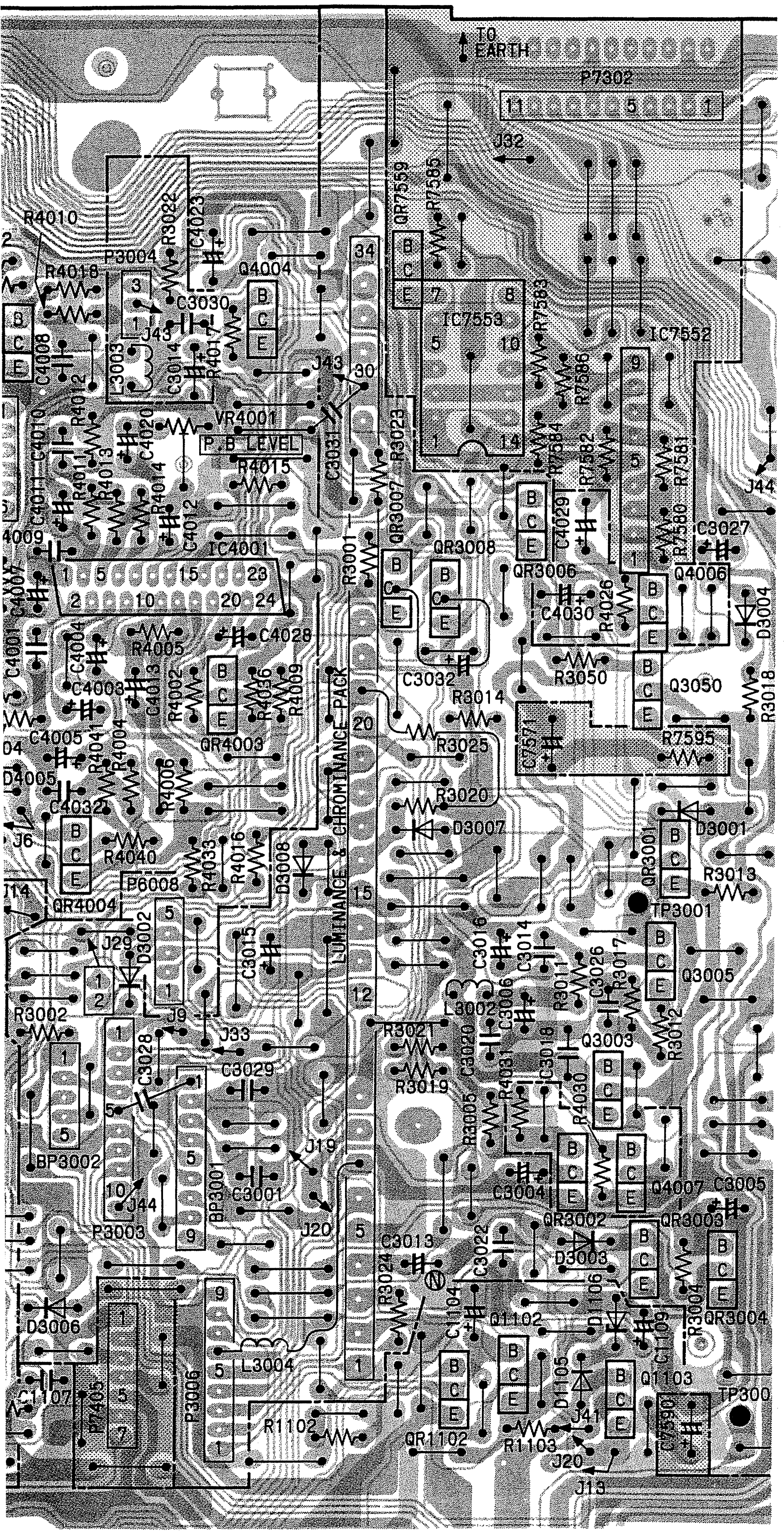
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Platinen des FM-Tonteils
FM Audio Circuit Boards

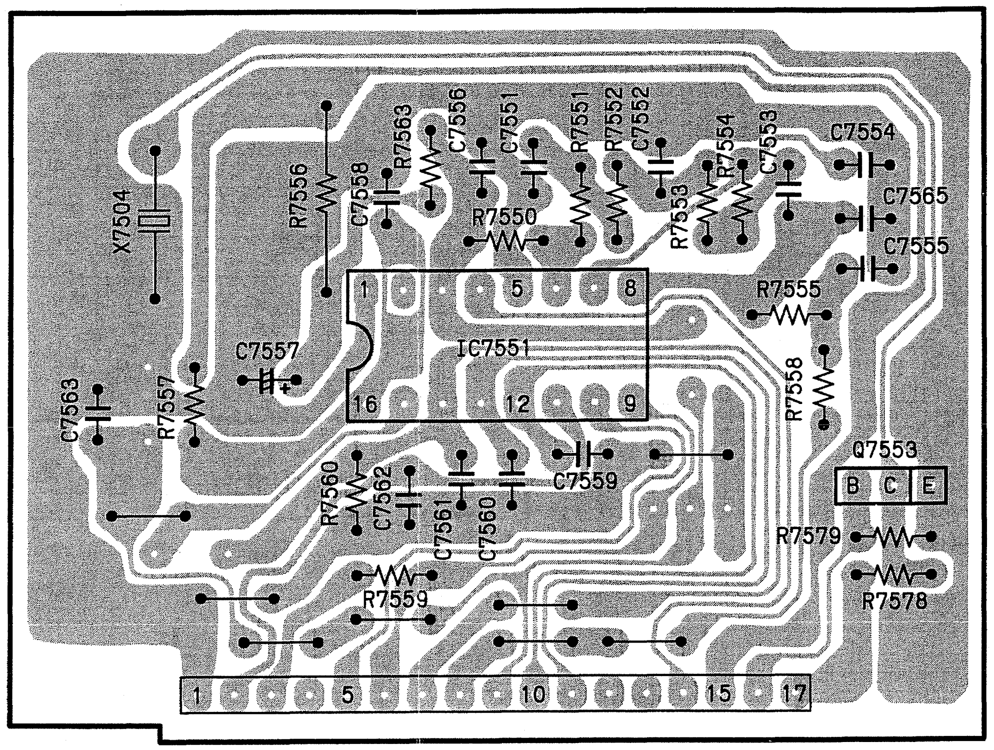

FM-Tonteil-Zusatzplatine (2)
Sub (2) FM Audio C.B.A
FM-Tonteil-Zusatzplatine (1)
Sub (1) FM Audio C.B.A
FM-Tonteil-Platine
FM Audio C.B.A.
IC4501
IC4502
IC4503
IC4504
IC4651
IC4652

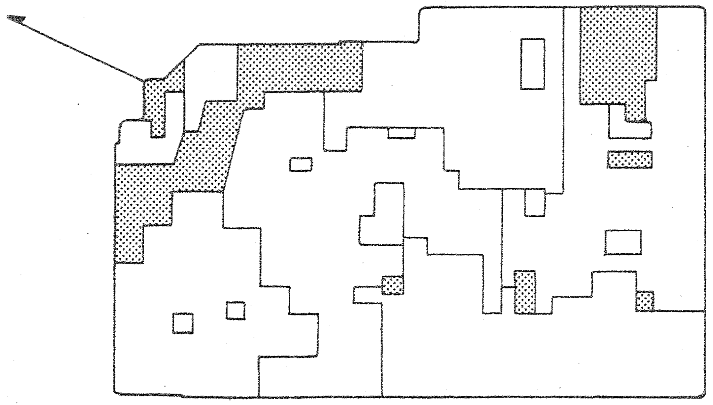
Kanalwahlteil auf der Hauptplatine
Channel Select Section on Main C.B.A.


CHANNEL SELECT PACK
EQ PACK
LUMINANCE & CHROMINANCE PACK
METER L
METER R
VR4004
VR4005
P/B LEVEL
VR4001
BIAS ADJ
VR4002
H SW SHIFT
SLOW FREE RUN
VR2013
TRACKING FIX
VR2002
TO EARTH
P7302
IC2001
IC6001
IC6002
IC6003
IC6004
IC4001
IC7552
IC7553
FL4001
T4001
TP4502
TP4511
TP4003
TP2001
TP3001
TP1002
TP1003
TP2002
TP2009
TP2020
TP2025
TP2008
TP6011
TP GND2

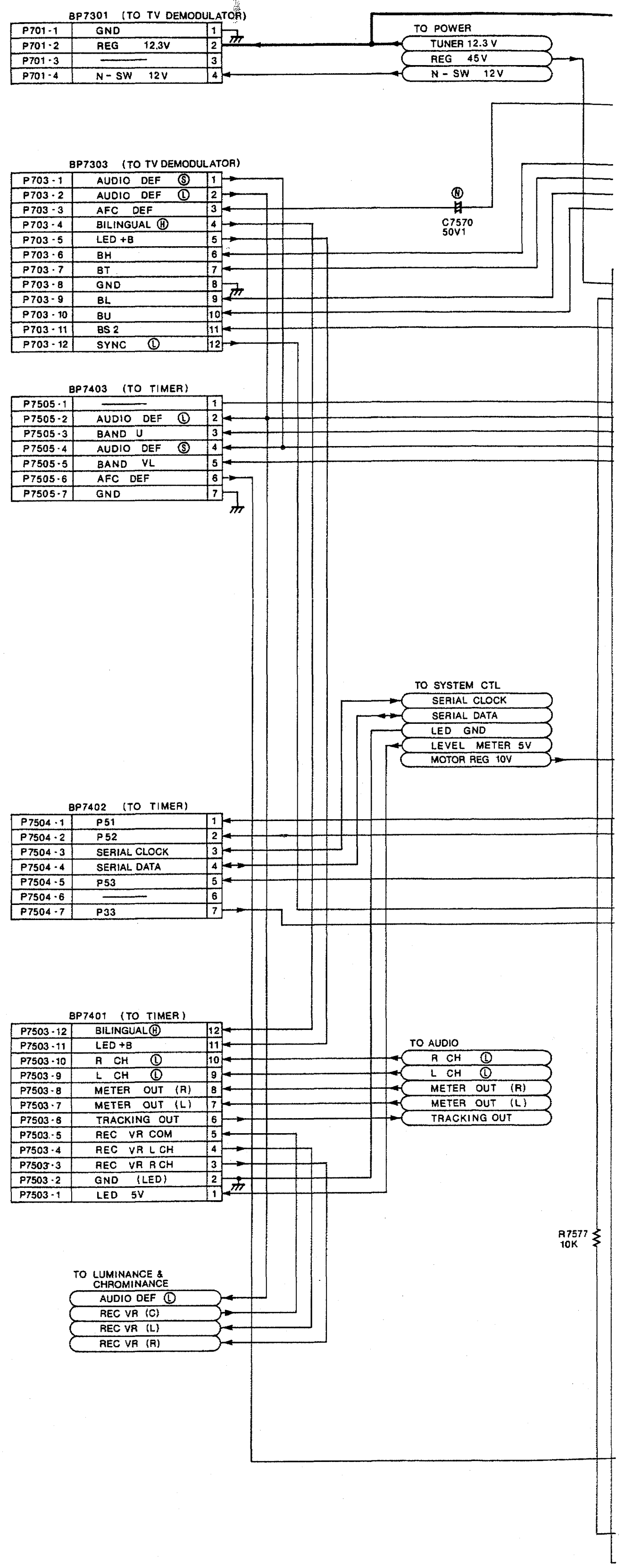

TO EARTH
P7302
J32
R4010
R4018
P3004
R3022
C4023
Q4004
QR7559
R7585
IC7553
R7583
IC7552
C3030
J43
C4008
R4012
C3003
R4017
C3014
VR4001
P.B. LEVEL
R4015
C3031
R3023
R7584
R7582
R7581
C4010
R4011
C4020
R4014
C4012
IC4001
R3001
QR3007
QR3008
C4029
R7580
C3027
Q4006
J44
QR3006
C4030
R4026
D3004
C4004
R4005
C4028
C4003
R4002
R4036
R4009
CHROMINANCE PACK
LUMINANCE
C3032
R3014
R3050
Q3050
R3018
C7571
QR4003
R3025
R7595
C4005
R4004
R4003
R3020
D3007
D3001
C4032
R4040
R4033
R4016
D3008
QR3001
R3013
QR4004
P6008
TP3001
J29
D3002
C3015
C3016
C3014
C3026
R3017
Q3005
R3002
L3002
R3011
R3012
J9
J33
C3029
R3021
C3020
C3006
C3018
Q3003
C3028
R3019
R3005
R4031
R4030
BP3002
J19
C3001
BP3001
P3003
J44
J20
C3004
QR3002
Q4007
QR3003
C3005
C3013
R3024
C3022
D3003
D3006
C1104
Q1102
D1106
C1109
R3004
QR3004
L3004
D1105
Q1103
TP300
C1107
P7405
P3006
R1102
QR1102
R1103
J41
J20
J13
C7590

Zusatzplatine Kanalwahlteil
Channel Select Pack C.B.A.


X7504
R7556
C7558
R7563
C7556
C7551
R7551
R7552
C7552
R7553
R7554
C7553
C7554
C7565
C7555
R7550
R7555
IC7551
1
5
8
16
12
9
C7557
R7558
C7563
R7557
Q7553
B C E
R7560
C7562
C7561
C7560
C7559
R7579
R7578
R7559
1
5
10
15
17

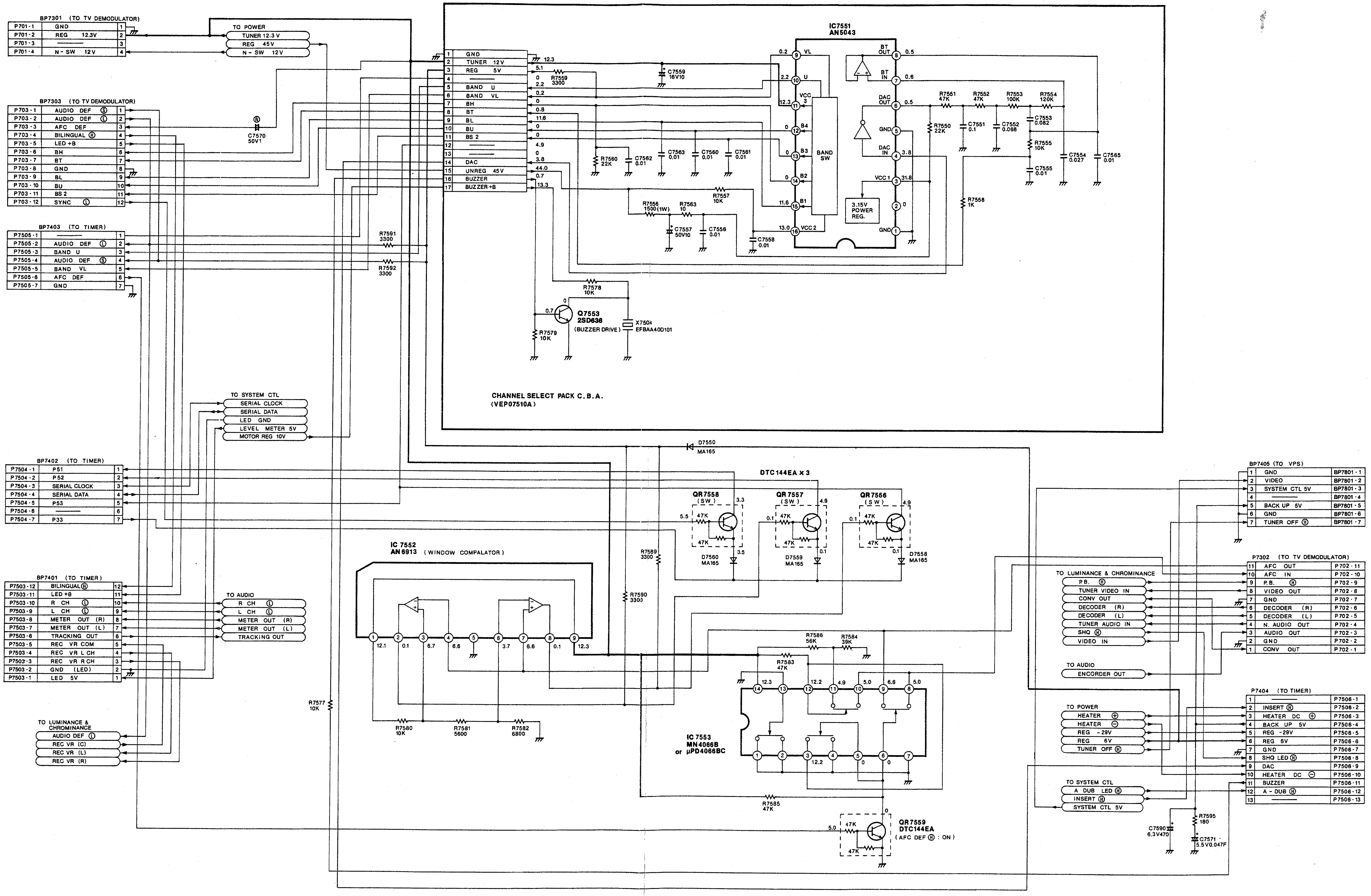


Schaltbild Kanalwahlteil
Channel Select Schematic Diagram


BP7301 (TO TV DEMODULATOR)
P701-1 GND 1
P701-2 REG 12.3V 2
P701-3 ——— 3
P701-4 N-SW 12V 4
TO POWER
TUNER 12.3 V
REG 45V
N - SW 12V
BP7303 (TO TV DEMODULATOR)
P703-1 AUDIO DEF Ⓢ 1
P703-2 AUDIO DEF Ⓛ 2
P703-3 AFC DEF 3
P703-4 BILINGUAL Ⓗ 4
P703-5 LED +B 5
P703-6 BH 6
P703-7 BT 7
P703-8 GND 8
P703-9 BL 9
P703-10 BU 10
P703-11 BS 2 11
P703-12 SYNC Ⓛ 12
Ⓝ
C7570
50V1
BP7403 (TO TIMER)
P7505-1 ——— 1
P7505-2 AUDIO DEF Ⓛ 2
P7505-3 BAND U 3
P7505-4 AUDIO DEF Ⓢ 4
P7505-5 BAND VL 5
P7505-6 AFC DEF 6
P7505-7 GND 7
TO SYSTEM CTL
SERIAL CLOCK
SERIAL DATA
LED GND
LEVEL METER 5V
MOTOR REG 10V
BP7402 (TO TIMER)
P7504-1 P51 1
P7504-2 P52 2
P7504-3 SERIAL CLOCK 3
P7504-4 SERIAL DATA 4
P7504-5 P53 5
P7504-6 ——— 6
P7504-7 P33 7
BP7401 (TO TIMER)
P7503-12 BILINGUAL Ⓗ 12
P7503-11 LED +B 11
P7503-10 R CH Ⓛ 10
P7503-9 L CH Ⓛ 9
P7503-8 METER OUT (R) 8
P7503-7 METER OUT (L) 7
P7503-6 TRACKING OUT 6
P7503-5 REC VR COM 5
P7503-4 REC VR L CH 4
P7503-3 REC VR R CH 3
P7503-2 GND (LED) 2
P7503-1 LED 5V 1
TO AUDIO
R CH Ⓛ
L CH Ⓛ
METER OUT (R)
METER OUT (L)
TRACKING OUT
R7577
10K
TO LUMINANCE & CHROMINANCE
AUDIO DEF Ⓛ
REC VR (C)
REC VR (L)
REC VR (R)

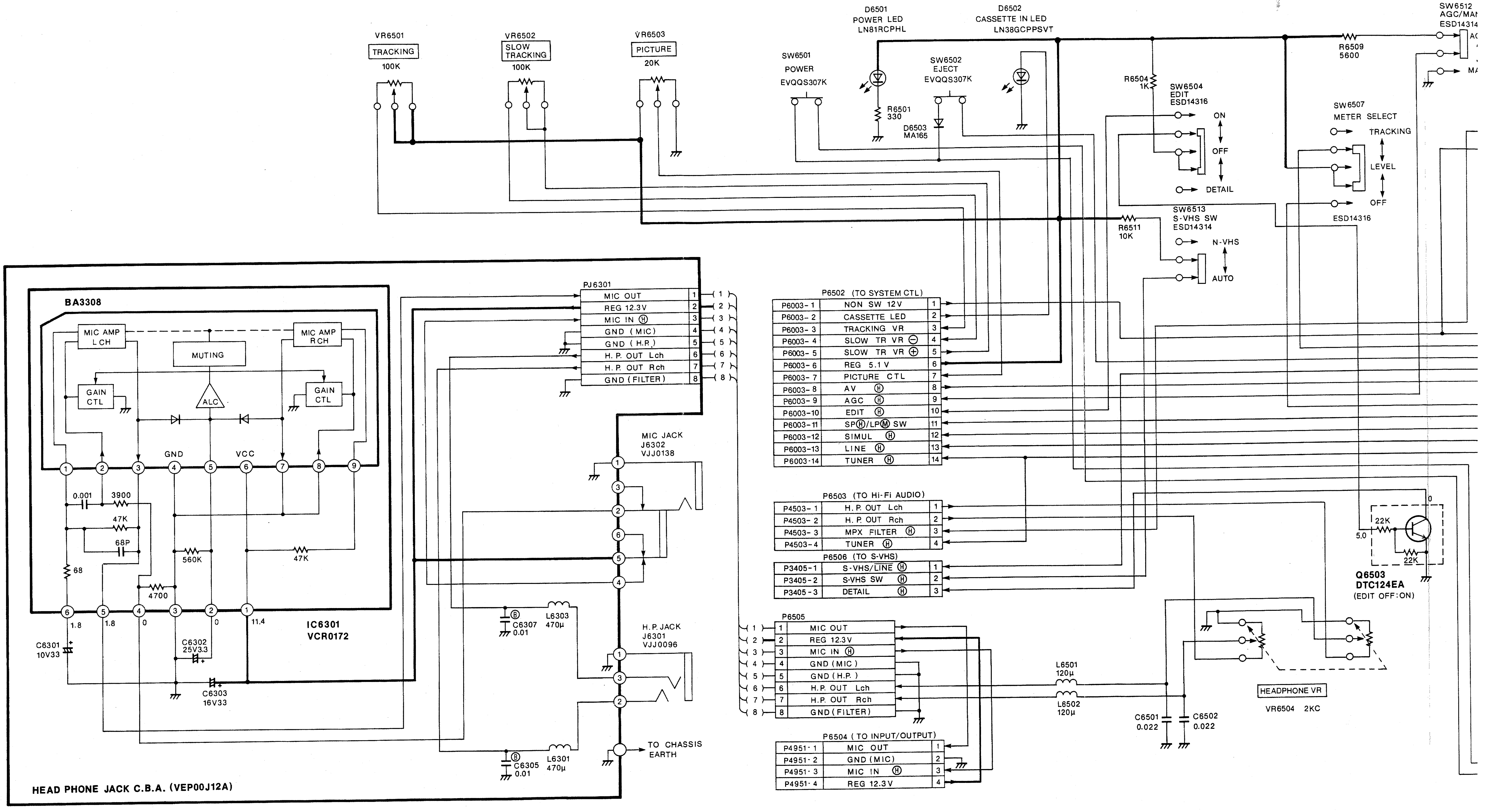
Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop").
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild Kanalwahlteil
Channel Select Schematic Diagram


BP7301 (TO TV DEMODULATOR)
P701-1 GND
P701-2 REG 12.3V
P701-3
P701-4 N-SW 12V
TO POWER
TUNER 12.3 V
REG 45V
N-SW 12V
BP7303 (TO TV DEMODULATOR)
P703-1 AUDIO DEF Ⓢ
P703-2 AUDIO DEF Ⓛ
P703-3 AFC DEF
P703-4 BILINGUAL Ⓗ
P703-5 LED +B
P703-6 BH
P703-7 BT
P703-8 GND
P703-9 BL
P703-10 BU
P703-11 BS 2
P703-12 SYNC Ⓛ
C7570 50V1
BP7403 (TO TIMER)
P7505-1
P7505-2 AUDIO DEF Ⓛ
P7505-3 BAND U
P7505-4 AUDIO DEF Ⓢ
P7505-5 BAND VL
P7505-6 AFC DEF
P7505-7 GND
R7591 3300
R7592 3300
1 GND
2 TUNER 12V
3 REG 5V
5 BAND U
6 BAND VL
7 BH
8 BT
9 BL
10 BU
11 BS 2
14 DAC
15 UNREG 45V
16 BUZZER
17 BUZZER +B
R7559 3300
C7559 16V10
IC7551 AN5043
VL
U
VCC 3
B4
B3
B2
B1
VCC 2
BAND SW
BT OUT
BT IN
DAC OUT
GND
DAC IN
VCC 1
3.15V POWER REG.
R7551 47K
R7552 47K
R7553 100K
R7554 120K
R7550 22K
C7551 0.1
C7552 0.068
C7553 0.082
R7555 10K
C7555 0.01
C7554 0.027
C7565 0.01
R7558 1K
R7560 22K
C7562 0.01
C7563 0.01
C7560 0.01
C7561 0.01
R7556 1500(1W)
R7563 10
R7557 10K
C7557 50V10
C7556 0.01
C7558 0.01
R7578 10K
Q7553 2SD638 (BUZZER DRIVE)
R7579 10K
X7504 EFBAA40D101
CHANNEL SELECT PACK C.B.A. (VEP07510A)
TO SYSTEM CTL
SERIAL CLOCK
SERIAL DATA
LED GND
LEVEL METER 5V
MOTOR REG 10V
D7550 MA165
DTC144EA x 3
QR7558 (SW)
QR7557 (SW)
QR7556 (SW)
D7560 MA165
D7559 MA165
D7558 MA165
R7589 3300
R7590 3300
BP7402 (TO TIMER)
P7504-1 P51
P7504-2 P52
P7504-3 SERIAL CLOCK
P7504-4 SERIAL DATA
P7504-5 P53
P7504-6
P7504-7 P33
IC 7552 AN6913 (WINDOW COMPALATOR)
BP7401 (TO TIMER)
P7503-12 BILINGUAL Ⓗ
P7503-11 LED +B
P7503-10 R CH Ⓛ
P7503-9 L CH Ⓛ
P7503-8 METER OUT (R)
P7503-7 METER OUT (L)
P7503-6 TRACKING OUT
P7503-5 REC VR COM
P7503-4 REC VR L CH
P7503-3 REC VR R CH
P7503-2 GND (LED)
P7503-1 LED 5V
TO AUDIO
R CH Ⓛ
L CH Ⓛ
METER OUT (R)
METER OUT (L)
TRACKING OUT
R7577 10K
R7580 10K
R7581 5600
R7582 6800
TO LUMINANCE & CHROMINANCE
AUDIO DEF Ⓛ
REC VR (C)
REC VR (L)
REC VR (R)
R7586 56K
R7584 39K
R7583 47K
IC 7553 MN4066B or µPD4066BC
R7585 47K
QR7559 DTC144EA (AFC DEF Ⓗ : ON)
BP7405 (TO VPS)
1 GND BP7801-1
2 VIDEO BP7801-2
3 SYSTEM CTL 5V BP7801-3
4 BP7801-4
5 BACK UP 5V BP7801-5
6 GND BP7801-6
7 TUNER OFF Ⓗ BP7801-7
P7302 (TO TV DEMODULATOR)
11 AFC OUT P702-11
10 AFC IN P702-10
9 P.B. Ⓗ P702-9
8 VIDEO OUT P702-8
7 GND P702-7
6 DECODER (R) P702-6
5 DECODER (L) P702-5
4 N. AUDIO OUT P702-4
3 AUDIO OUT P702-3
2 GND P702-2
1 CONV OUT P702-1
TO LUMINANCE & CHROMINANCE
P.B. Ⓗ
TUNER VIDEO IN
CONV OUT
DECODER (R)
DECODER (L)
TUNER AUDIO IN
SHQ Ⓗ
VIDEO IN
TO AUDIO
ENCORDER OUT
P7404 (TO TIMER)
1 P7506-1
2 INSERT Ⓗ P7506-2
3 HEATER DC ⊕ P7506-3
4 BACK UP 5V P7506-4
5 REG -29V P7506-5
6 REG 6V P7506-6
7 GND P7506-7
8 SHQ LED Ⓗ P7506-8
9 DAC P7506-9
10 HEATER DC ⊖ P7506-10
11 BUZZER P7506-11
12 A-DUB Ⓗ P7506-12
13 P7506-13
TO POWER
HEATER ⊕
HEATER ⊖
REG -29V
REG 6V
TUNER OFF Ⓗ
TO SYSTEM CTL
A DUB LED Ⓗ
INSERT Ⓗ
SYSTEM CTL 5V
R7595 180
C7590 6.3V470
C7571 5.5V0.047F

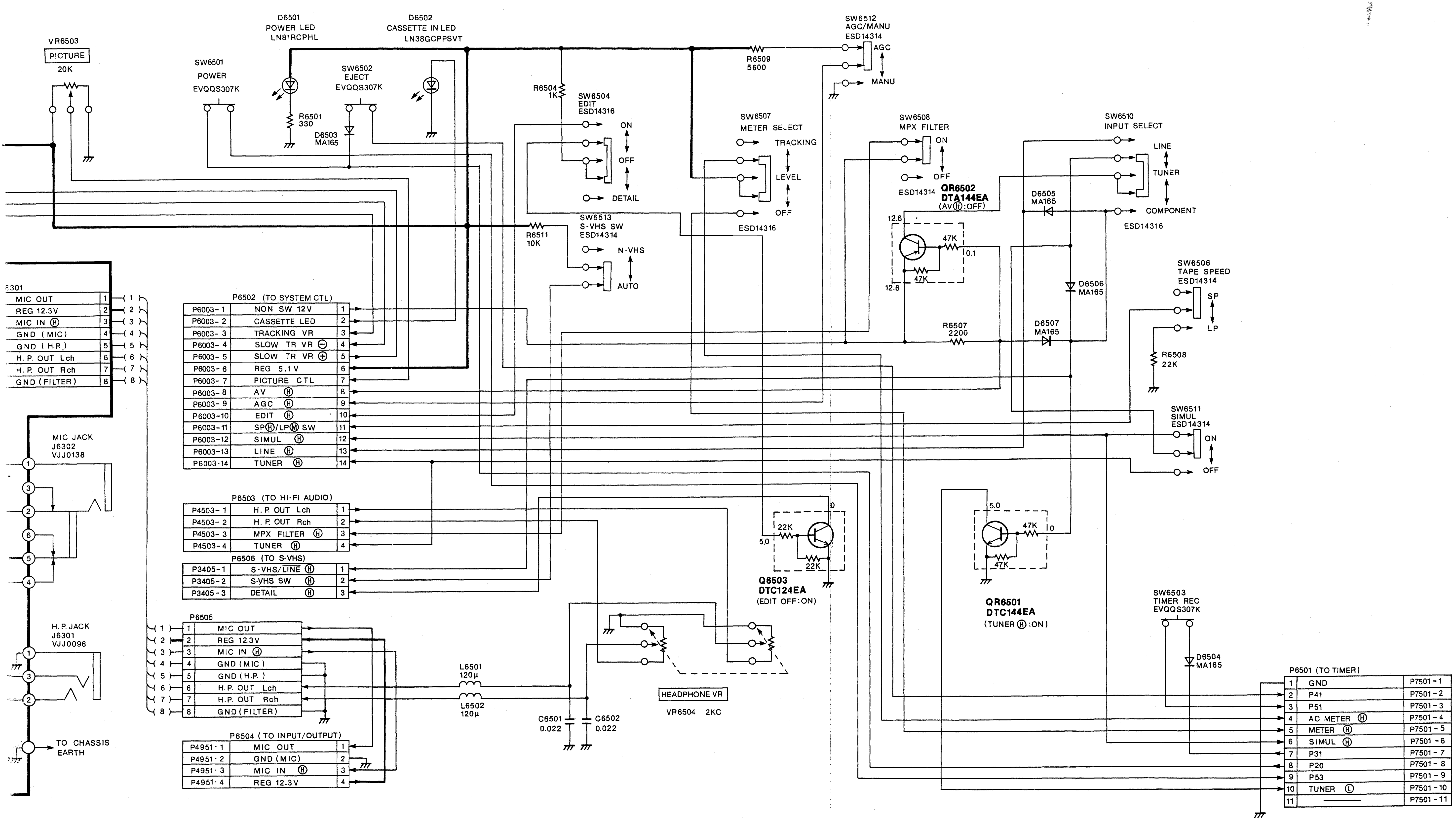
Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop“).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild Bedienteil (EGC)
Operation Schematic Diagram (EGC)


VR6501
TRACKING
100K
VR6502
SLOW TRACKING
100K
VR6503
PICTURE
20K
SW6501
POWER
EVQQS307K
D6501
POWER LED
LN81RCPHL
R6501
330
D6503
MA165
SW6502
EJECT
EVQQS307K
D6502
CASSETTE IN LED
LN38GCPPSVT
R6504
1K
SW6504
EDIT
ESD14316
ON
OFF
DETAIL
R6509
5600
SW6512
AGC/MA
ESD14314
SW6507
METER SELECT
TRACKING
LEVEL
OFF
ESD14316
R6511
10K
SW6513
S-VHS SW
ESD14314
N-VHS
AUTO
BA3308
MIC AMP L CH
MIC AMP R CH
MUTING
GAIN CTL
ALC
GND
VCC
0.001
3900
47K
68P
68
560K
47K
4700
1.8
1.8
0
0
11.4
C6301
10V33
C6302
25V3.3
C6303
16V33
IC6301
VCR0172
PJ6301
MIC OUT
REG 12.3V
MIC IN Ⓗ
GND (MIC)
GND (H.P.)
H.P. OUT Lch
H.P. OUT Rch
GND (FILTER)
MIC JACK
J6302
VJJ0138
C6307
0.01
L6303
470µ
H.P. JACK
J6301
VJJ0096
C6305
0.01
L6301
470µ
TO CHASSIS EARTH
HEAD PHONE JACK C.B.A. (VEP00J12A)
P6502 (TO SYSTEM CTL)
P6003-1 NON SW 12V 1
P6003-2 CASSETTE LED 2
P6003-3 TRACKING VR 3
P6003-4 SLOW TR VR ⊖ 4
P6003-5 SLOW TR VR ⊕ 5
P6003-6 REG 5.1V 6
P6003-7 PICTURE CTL 7
P6003-8 AV Ⓗ 8
P6003-9 AGC Ⓗ 9
P6003-10 EDIT Ⓗ 10
P6003-11 SPⒽ/LPⓂ SW 11
P6003-12 SIMUL Ⓗ 12
P6003-13 LINE Ⓗ 13
P6003-14 TUNER Ⓗ 14
P6503 (TO Hi-Fi AUDIO)
P4503-1 H.P. OUT Lch 1
P4503-2 H.P. OUT Rch 2
P4503-3 MPX FILTER Ⓗ 3
P4503-4 TUNER Ⓗ 4
P6506 (TO S-VHS)
P3405-1 S-VHS/LINE Ⓗ 1
P3405-2 S-VHS SW Ⓗ 2
P3405-3 DETAIL Ⓗ 3
P6505
MIC OUT
REG 12.3V
MIC IN Ⓗ
GND (MIC)
GND (H.P.)
H.P. OUT Lch
H.P. OUT Rch
GND (FILTER)
P6504 (TO INPUT/OUTPUT)
P4951-1 MIC OUT 1
P4951-2 GND (MIC) 2
P4951-3 MIC IN Ⓗ 3
P4951-4 REG 12.3V 4
L6501
120µ
L6502
120µ
C6501
0.022
C6502
0.022
22K
22K
5.0
0
Q6503
DTC124EA
(EDIT OFF:ON)
HEADPHONE VR
VR6504 2KC

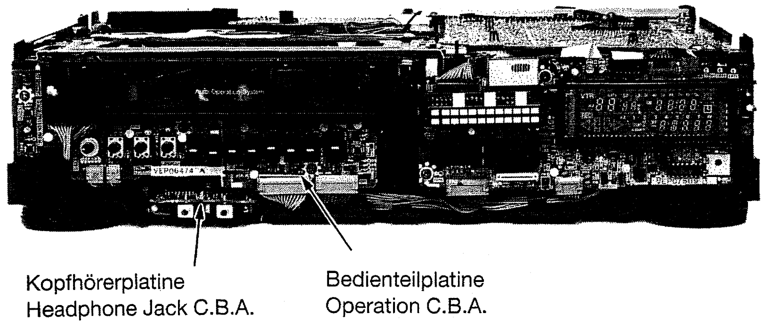
Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop")
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild Bedienteil (EGC)
Operation Schematic Diagram (EGC)


VR6503
PICTURE
20K
SW6501
POWER
EVQQS307K
D6501
POWER LED
LN81RCPHL
R6501
330
SW6502
EJECT
EVQQS307K
D6503
MA165
D6502
CASSETTE IN LED
LN38GCPPSVT
R6504
1K
SW6504
EDIT
ESD14316
ON
OFF
DETAIL
R6511
10K
SW6513
S-VHS SW
ESD14314
N-VHS
AUTO
R6509
5600
SW6512
AGC/MANU
ESD14314
AGC
MANU
SW6507
METER SELECT
TRACKING
LEVEL
OFF
ESD14316
SW6508
MPX FILTER
ON
OFF
ESD14314
QR6502
DTA144EA
(AV Ⓗ:OFF)
12.6
47K
0.1
47K
12.6
R6507
2200
D6505
MA165
D6506
MA165
D6507
MA165
SW6510
INPUT SELECT
LINE
TUNER
COMPONENT
ESD14316
SW6506
TAPE SPEED
ESD14314
SP
LP
R6508
22K
SW6511
SIMUL
ESD14314
ON
OFF
301
MIC OUT 1
REG 12.3V 2
MIC IN Ⓗ 3
GND (MIC) 4
GND (H.P.) 5
H.P. OUT Lch 6
H.P. OUT Rch 7
GND (FILTER) 8
P6502 (TO SYSTEM CTL)
P6003-1 NON SW 12V 1
P6003-2 CASSETTE LED 2
P6003-3 TRACKING VR 3
P6003-4 SLOW TR VR ⊖ 4
P6003-5 SLOW TR VR ⊕ 5
P6003-6 REG 5.1V 6
P6003-7 PICTURE CTL 7
P6003-8 AV Ⓗ 8
P6003-9 AGC Ⓗ 9
P6003-10 EDIT Ⓗ 10
P6003-11 SPⒽ/LPⓂ SW 11
P6003-12 SIMUL Ⓗ 12
P6003-13 LINE Ⓗ 13
P6003-14 TUNER Ⓗ 14
MIC JACK
J6302
VJJ0138
P6503 (TO Hi-Fi AUDIO)
P4503-1 H.P. OUT Lch 1
P4503-2 H.P. OUT Rch 2
P4503-3 MPX FILTER Ⓗ 3
P4503-4 TUNER Ⓗ 4
P6506 (TO S-VHS)
P3405-1 S-VHS/LINE Ⓗ 1
P3405-2 S-VHS SW Ⓗ 2
P3405-3 DETAIL Ⓗ 3
0
22K
5.0
22K
Q6503
DTC124EA
(EDIT OFF:ON)
5.0
47K
0
47K
QR6501
DTC144EA
(TUNER Ⓗ:ON)
H.P. JACK
J6301
VJJ0096
TO CHASSIS EARTH
P6505
1 MIC OUT
2 REG 12.3V
3 MIC IN Ⓗ
4 GND (MIC)
5 GND (H.P.)
6 H.P. OUT Lch
7 H.P. OUT Rch
8 GND (FILTER)
P6504 (TO INPUT/OUTPUT)
P4951-1 MIC OUT 1
P4951-2 GND (MIC) 2
P4951-3 MIC IN Ⓗ 3
P4951-4 REG 12.3V 4
L6501
120μ
L6502
120μ
C6501
0.022
C6502
0.022
HEADPHONE VR
VR6504 2KC
SW6503
TIMER REC
EVQQS307K
D6504
MA165
P6501 (TO TIMER)
1 GND P7501-1
2 P41 P7501-2
3 P51 P7501-3
4 AC METER Ⓗ P7501-4
5 METER Ⓗ P7501-5
6 SIMUL Ⓗ P7501-6
7 P31 P7501-7
8 P20 P7501-8
9 P53 P7501-9
10 TUNER Ⓛ P7501-10
11 —— P7501-11

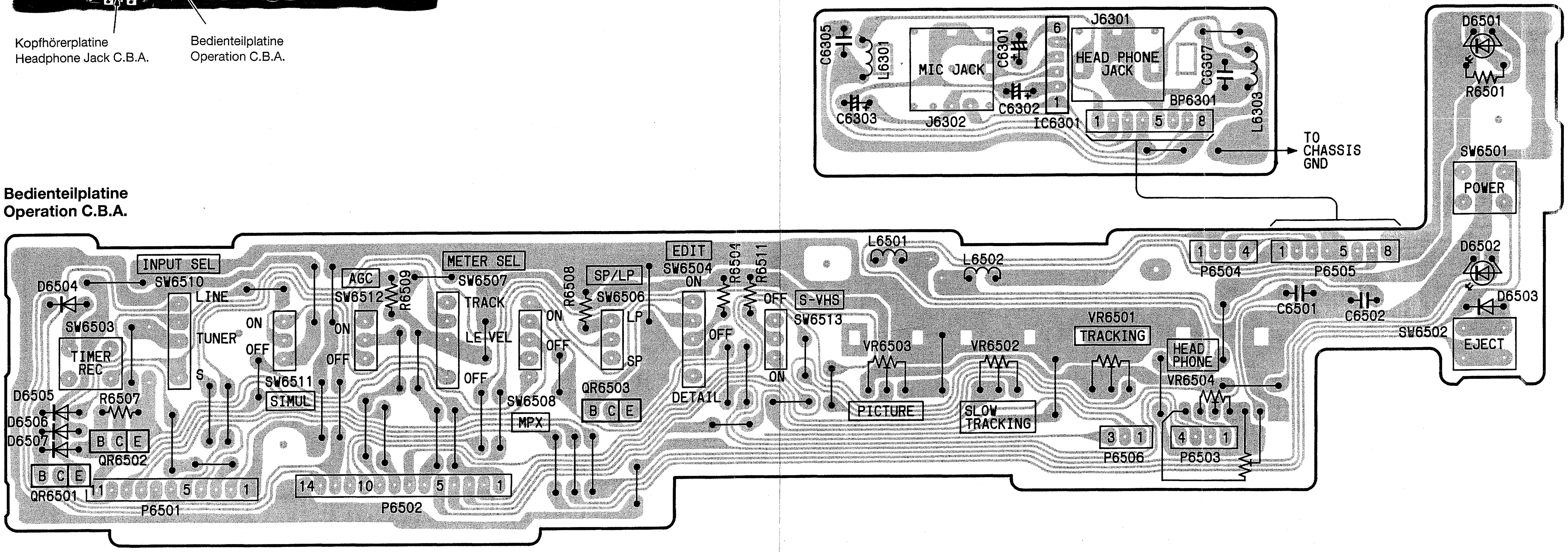
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Bedienplatine (EGC)
Operation C.B.A. (EGC)

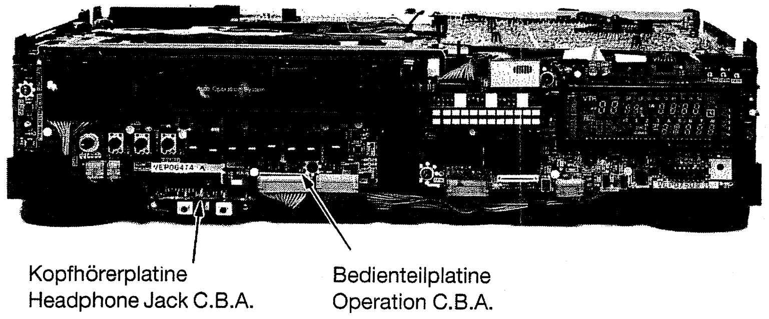

Kopfhörerplatine
Headphone Jack C.B.A.
Bedienteilplatine
Operation C.B.A.

Kopfhörerplatine
Headphone Jack C.B.A.

Bedienteilplatine
Operation C.B.A.

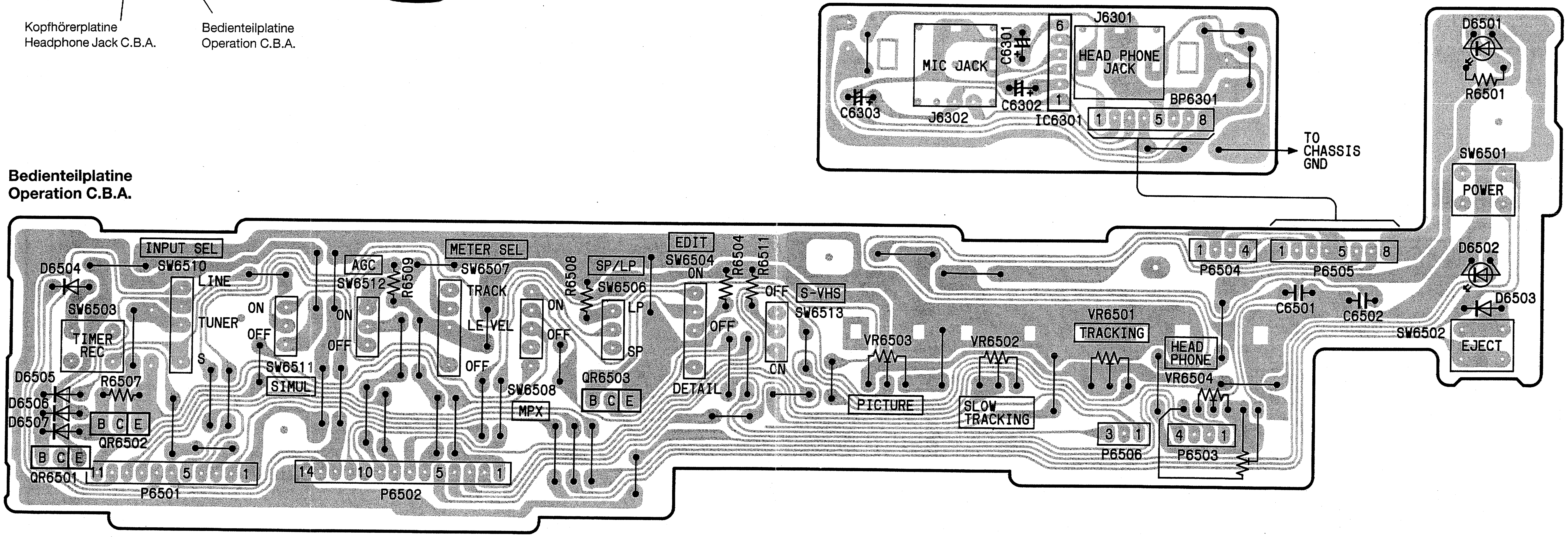

C6305
L6301
MIC JACK
C6301
6
1
J6301
HEAD PHONE JACK
C6307
BP6301
L6303
C6303
J6302
C6302
IC6301
1
5
8
TO CHASSIS GND
D6501
R6501
SW6501
POWER
D6502
D6503
SW6502
EJECT
INPUT SEL
SW6510
D6504
LINE
TUNER
S
SW6503
TIMER REC
ON
OFF
SW6511
SIMUL
AGC
SW6512
R6509
ON
OFF
METER SEL
SW6507
TRACK
LEVEL
OFF
R6508
ON
OFF
SW6508
MPX
SP/LP
SW6506
LP
SP
QR6503
B C E
EDIT
SW6504
ON
OFF
DETAIL
R6504
R6511
OFF
S-VHS
SW6513
ON
D6505
D6506
D6507
R6507
B C E
QR6502
B C E
QR6501
11
5
1
P6501
14
10
5
1
P6502
L6501
L6502
VR6503
PICTURE
VR6502
SLOW TRACKING
VR6501
TRACKING
HEAD PHONE
VR6504
3
1
P6506
4
1
P6503
1
4
P6504
1
5
8
P6505
C6501
C6502

Bedienteilplatine (ECV)
Operation C.B.A. (ECV)


VEP06474A
Kopfhörerplatine
Headphone Jack C.B.A.
Bedienteilplatine
Operation C.B.A.

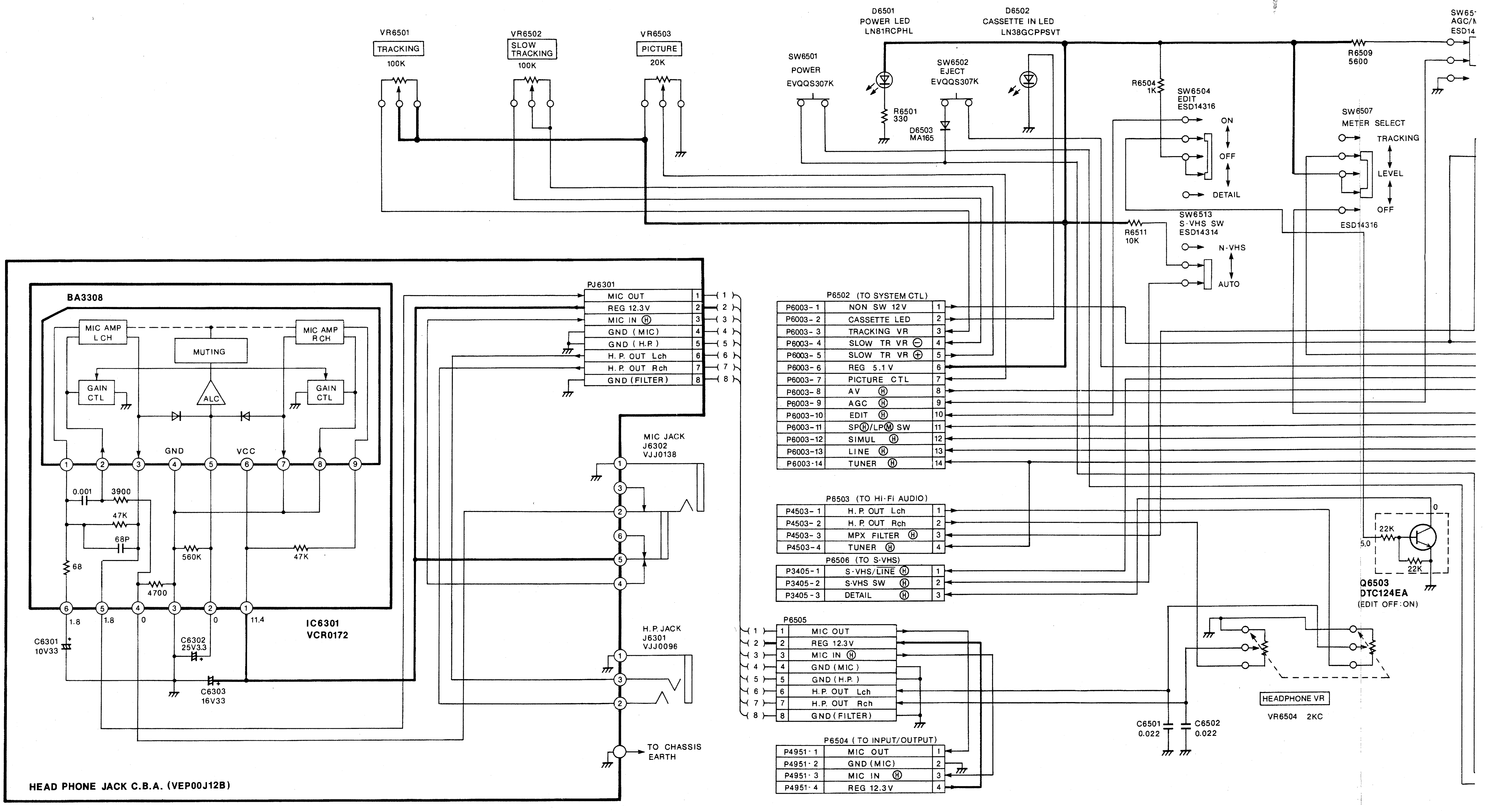
Kopfhörerplatine
Headphone Jack C.B.A.

Bedienteilplatine
Operation C.B.A.


J6301
6
1
C6301
MIC JACK
HEAD PHONE JACK
C6303
J6302
C6302
IC6301
BP6301
1
5
8
TO CHASSIS GND
D6501
R6501
SW6501
POWER
D6502
D6503
SW6502
EJECT
P6504
1
4
P6505
1
5
8
C6501
C6502
INPUT SEL
SW6510
LINE
TUNER
S
D6504
SW6503
TIMER REC
D6505
D6506
D6507
R6507
B C E
QR6502
B C E
QR6501
11
5
1
P6501
ON
OFF
SW6511
SIMUL
AGC
SW6512
ON
OFF
R6509
METER SEL
SW6507
TRACK
LEVEL
OFF
SW6508
MPX
14
10
5
1
P6502
R6508
ON
OFF
SP/LP
SW6506
LP
SP
QR6503
B C E
EDIT
SW6504
ON
OFF
DETAIL
R6504
R6511
OFF
S-VHS
SW6513
ON
VR6503
PICTURE
VR6502
SLOW TRACKING
VR6501
TRACKING
HEAD PHONE
VR6504
3
1
P6506
4
1
P6503

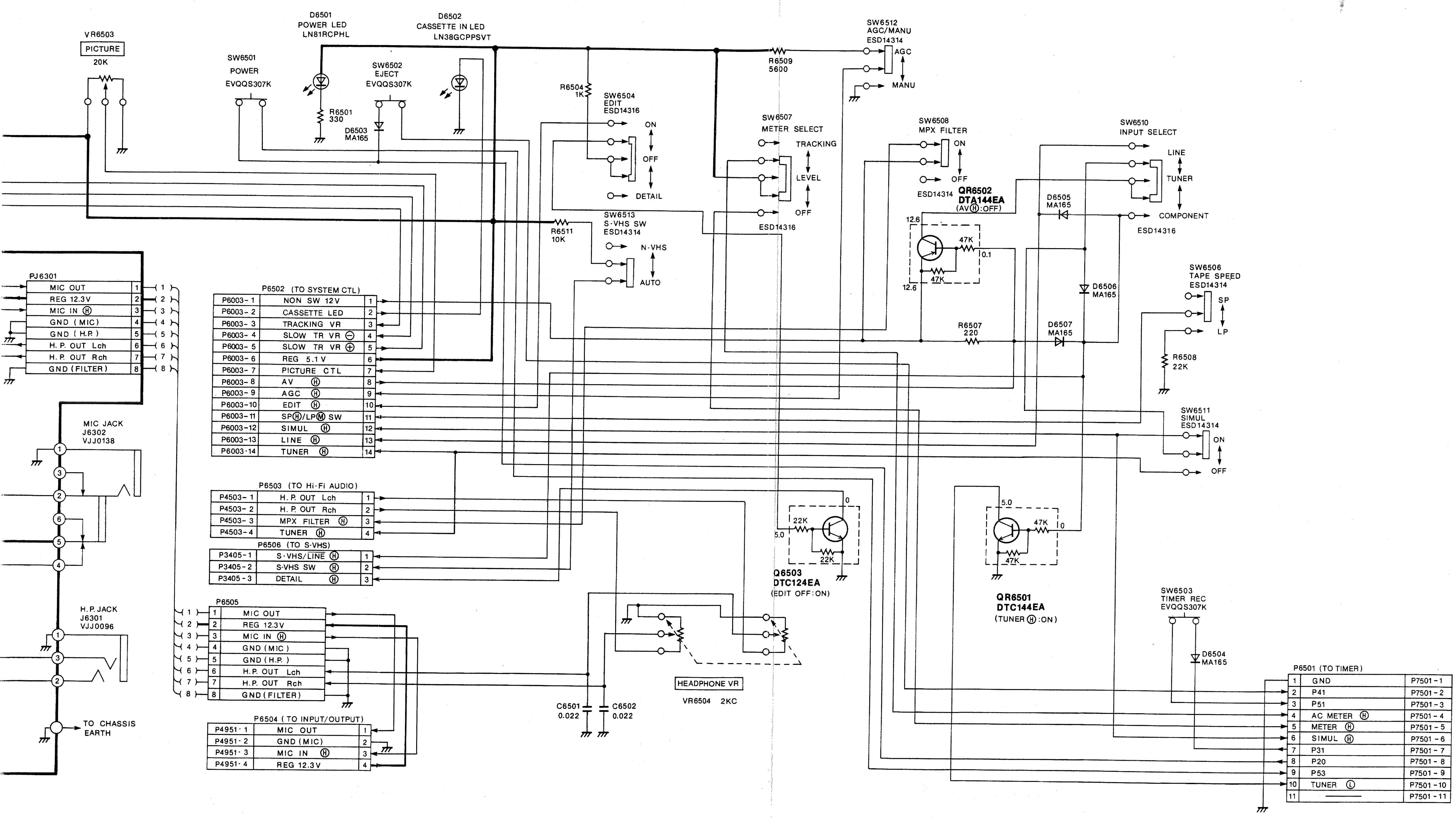
Schaltbild Bedienteil (ECV)
Operation Schematic Diagram (ECV)

Schaltbild
Operation


VR6501
TRACKING
100K
VR6502
SLOW TRACKING
100K
VR6503
PICTURE
20K
SW6501
POWER
EVQQS307K
D6501
POWER LED
LN81RCPHL
R6501
330
SW6502
EJECT
EVQQS307K
D6503
MA165
D6502
CASSETTE IN LED
LN38GCPPSVT
R6504
1K
SW6504
EDIT
ESD14316
ON
OFF
DETAIL
SW6513
S-VHS SW
ESD14314
N-VHS
AUTO
R6511
10K
R6509
5600
SW6507
METER SELECT
TRACKING
LEVEL
OFF
ESD14316
Q6503
DTC124EA
(EDIT OFF:ON)
22K
22K
5.0
0
BA3308
MIC AMP L CH
MIC AMP R CH
MUTING
GAIN CTL
GAIN CTL
ALC
GND
VCC
0.001
3900
47K
68P
68
560K
47K
4700
1.8
1.8
0
0
11.4
C6301
10V33
C6302
25V3.3
C6303
16V33
IC6301
VCR0172
PJ6301
MIC OUT
REG 12.3V
MIC IN Ⓗ
GND (MIC)
GND (H.P.)
H.P. OUT Lch
H.P. OUT Rch
GND (FILTER)
MIC JACK
J6302
VJJ0138
H.P. JACK
J6301
VJJ0096
TO CHASSIS EARTH
HEAD PHONE JACK C.B.A. (VEP00J12B)
P6502 (TO SYSTEM CTL)
P6003-1 NON SW 12V 1
P6003-2 CASSETTE LED 2
P6003-3 TRACKING VR 3
P6003-4 SLOW TR VR ⊖ 4
P6003-5 SLOW TR VR ⊕ 5
P6003-6 REG 5.1V 6
P6003-7 PICTURE CTL 7
P6003-8 AV Ⓗ 8
P6003-9 AGC Ⓗ 9
P6003-10 EDIT Ⓗ 10
P6003-11 SPⒽ/LPⓂ SW 11
P6003-12 SIMUL Ⓗ 12
P6003-13 LINE Ⓗ 13
P6003-14 TUNER Ⓗ 14
P6503 (TO Hi-Fi AUDIO)
P4503-1 H.P. OUT Lch 1
P4503-2 H.P. OUT Rch 2
P4503-3 MPX FILTER Ⓗ 3
P4503-4 TUNER Ⓗ 4
P6506 (TO S-VHS)
P3405-1 S-VHS/LINE Ⓗ 1
P3405-2 S-VHS SW Ⓗ 2
P3405-3 DETAIL Ⓗ 3
P6505
1 MIC OUT
2 REG 12.3V
3 MIC IN Ⓗ
4 GND (MIC)
5 GND (H.P.)
6 H.P. OUT Lch
7 H.P. OUT Rch
8 GND (FILTER)
P6504 (TO INPUT/OUTPUT)
P4951-1 MIC OUT 1
P4951-2 GND (MIC) 2
P4951-3 MIC IN Ⓗ 3
P4951-4 REG 12.3V 4
C6501
0.022
C6502
0.022
HEADPHONE VR
VR6504 2KC
SW65
AGC/
ESD14

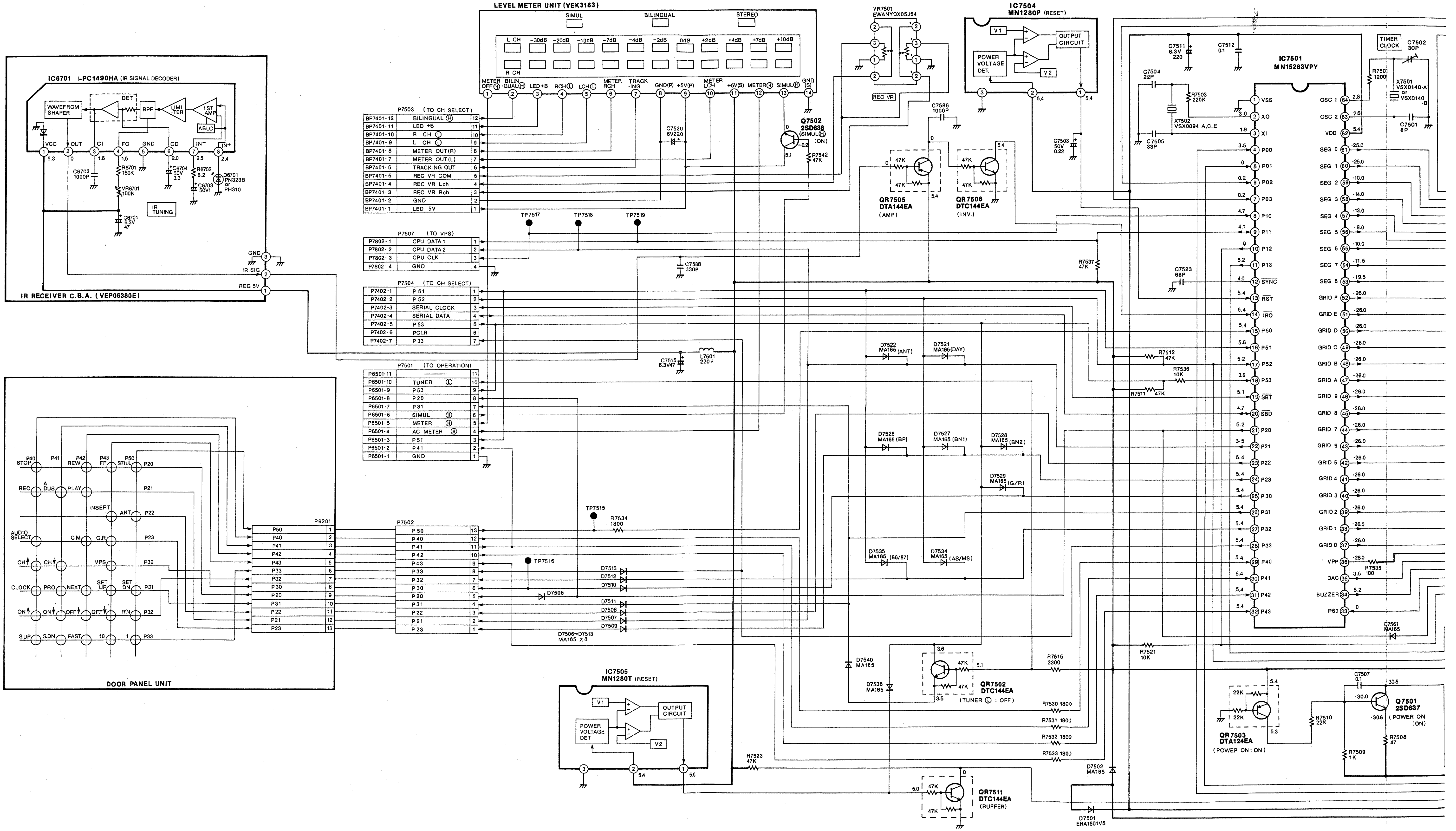
Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop")
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild Bedienteil (ECV)
Operation Schematic Diagram (ECV)


VR6503
PICTURE
20K
SW6501
POWER
EVQQS307K
D6501
POWER LED
LN81RCPHL
R6501
330
SW6502
EJECT
EVQQS307K
D6503
MA165
D6502
CASSETTE IN LED
LN38GCPPSVT
R6504
1K
SW6504
EDIT
ESD14316
ON
OFF
DETAIL
R6511
10K
SW6513
S-VHS SW
ESD14314
N-VHS
AUTO
R6509
5600
SW6512
AGC/MANU
ESD14314
AGC
MANU
SW6507
METER SELECT
TRACKING
LEVEL
OFF
ESD14316
SW6508
MPX FILTER
ON
OFF
ESD14314
QR6502
DTA144EA
(AV Ⓗ:OFF)
12.6
47K
0.1
47K
12.6
D6505
MA165
SW6510
INPUT SELECT
LINE
TUNER
COMPONENT
ESD14316
D6506
MA165
SW6506
TAPE SPEED
ESD14314
SP
LP
R6507
220
D6507
MA165
R6508
22K
SW6511
SIMUL
ESD14314
ON
OFF
PJ6301
MIC OUT
REG 12.3V
MIC IN Ⓗ
GND (MIC)
GND (H.P.)
H. P. OUT Lch
H. P. OUT Rch
GND (FILTER)
P6502 (TO SYSTEM CTL)
P6003-1 NON SW 12V
P6003-2 CASSETTE LED
P6003-3 TRACKING VR
P6003-4 SLOW TR VR ⊖
P6003-5 SLOW TR VR ⊕
P6003-6 REG 5.1V
P6003-7 PICTURE CTL
P6003-8 AV Ⓗ
P6003-9 AGC Ⓗ
P6003-10 EDIT Ⓗ
P6003-11 SPⒽ/LPⓂ SW
P6003-12 SIMUL Ⓗ
P6003-13 LINE Ⓗ
P6003-14 TUNER Ⓗ
MIC JACK
J6302
VJJ0138
P6503 (TO Hi-Fi AUDIO)
P4503-1 H. P. OUT Lch
P4503-2 H. P. OUT Rch
P4503-3 MPX FILTER Ⓗ
P4503-4 TUNER Ⓗ
P6506 (TO S-VHS)
P3405-1 S-VHS/LINE Ⓗ
P3405-2 S-VHS SW Ⓗ
P3405-3 DETAIL Ⓗ
22K
5.0
22K
0
Q6503
DTC124EA
(EDIT OFF:ON)
5.0
47K
0
47K
QR6501
DTC144EA
(TUNER Ⓗ:ON)
H.P. JACK
J6301
VJJ0096
P6505
MIC OUT
REG 12.3V
MIC IN Ⓗ
GND (MIC)
GND (H.P.)
H.P. OUT Lch
H.P. OUT Rch
GND (FILTER)
TO CHASSIS EARTH
P6504 (TO INPUT/OUTPUT)
P4951-1 MIC OUT
P4951-2 GND (MIC)
P4951-3 MIC IN Ⓗ
P4951-4 REG 12.3V
C6501
0.022
C6502
0.022
HEADPHONE VR
VR6504 2KC
SW6503
TIMER REC
EVQQS307K
D6504
MA165
P6501 (TO TIMER)
1 GND P7501-1
2 P41 P7501-2
3 P51 P7501-3
4 AC METER Ⓗ P7501-4
5 METER Ⓗ P7501-5
6 SIMUL Ⓗ P7501-6
7 P31 P7501-7
8 P20 P7501-8
9 P53 P7501-9
10 TUNER Ⓛ P7501-10
11 P7501-11

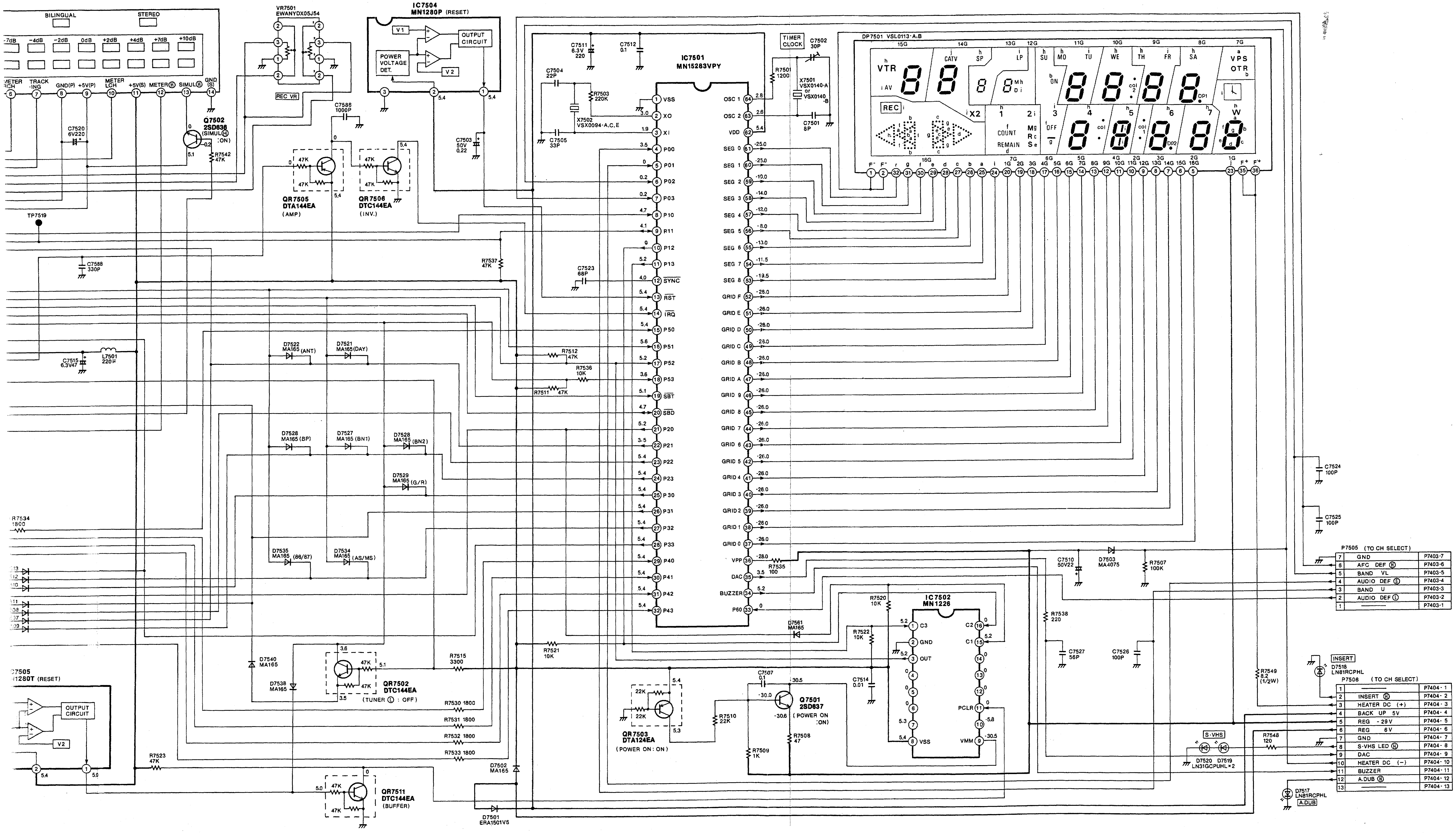
Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

Schaltbild Timer
Timer Schematic Diagram


LEVEL METER UNIT (VEK3183)
IC6701 μPC1490HA (IR SIGNAL DECODER)
IR RECEIVER C.B.A. (VEP06380E)
DOOR PANEL UNIT
IC7504 MN1280P (RESET)
IC7505 MN1280T (RESET)
IC7501 MN15283VPY
VR7501 EWANYDX05J54
Q7502 2SD636
QR7505 DTA144EA (AMP)
QR7506 DTC144EA (INV.)
QR7502 DTC144EA
QR7511 DTC144EA (BUFFER)
QR7503 DTA124EA (POWER ON : ON)
Q7501 2SD637 (POWER ON :ON)
P7503 (TO CH SELECT)
P7507 (TO VPS)
P7504 (TO CH SELECT)
P7501 (TO OPERATION)
P7502
P6201
TIMER CLOCK
X7501 VSX0140-A or VSX0140-B
X7502 VSX0094-A,C,E
D7501 ERA1501V5
D7506~D7513 MA165 X 8

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop“).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild Timer
Timer Schematic Diagram

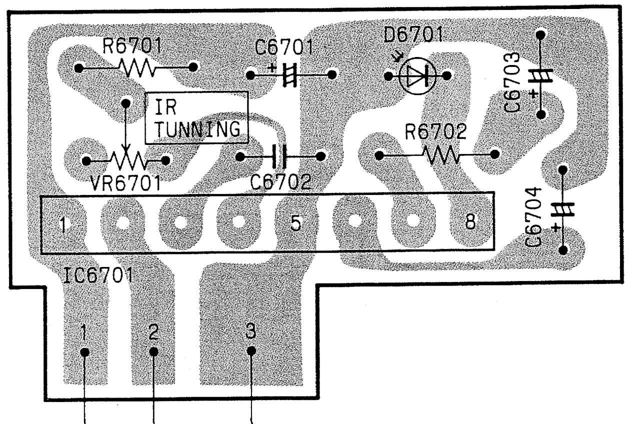


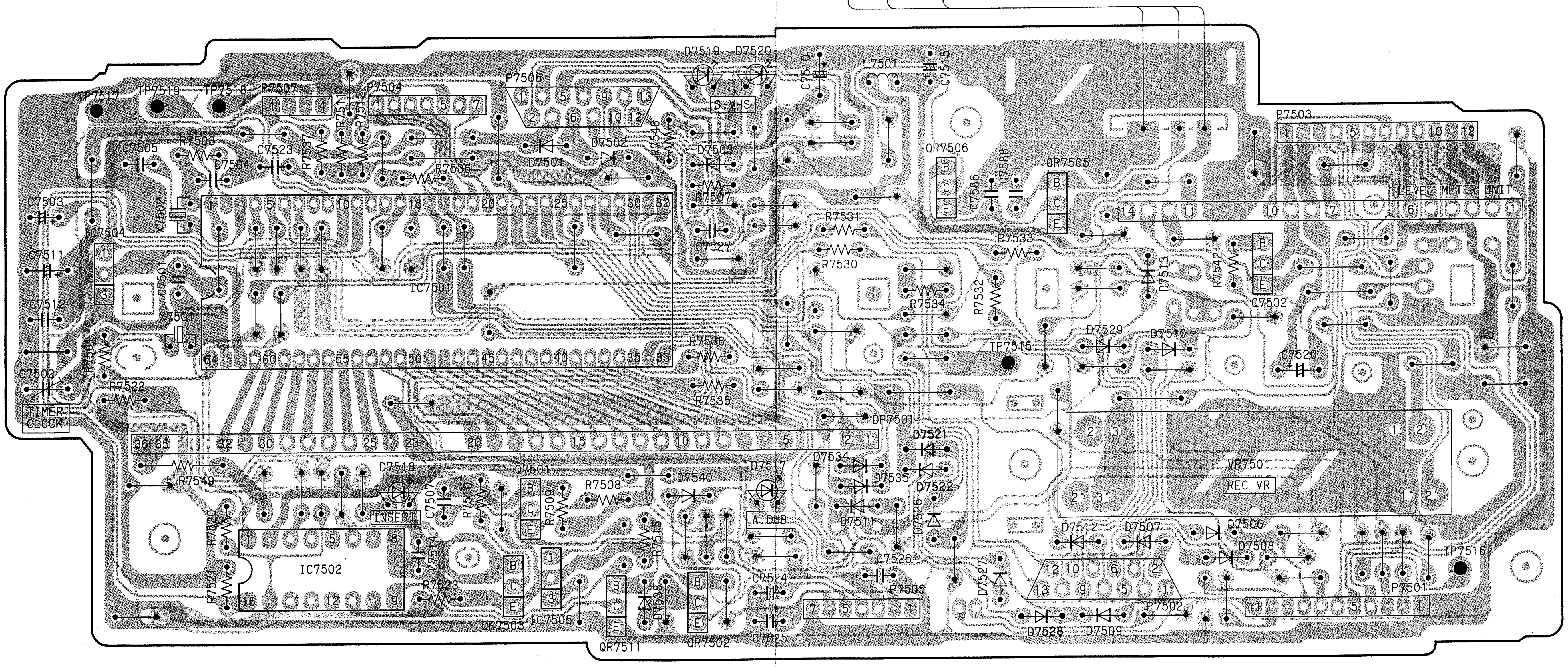
BILINGUAL
STEREO
-4dB
-2dB
0dB
+2dB
+4dB
+7dB
+10dB
TRACK -ING
GND(P)
+5V(P)
METER LCH
+5V(S)
METER(H)
SIMUL(H)
GND (S)
VR7501 EWANYDX05J54
REC VR
IC7504 MN1280P (RESET)
POWER VOLTAGE DET.
OUTPUT CIRCUIT
V1
V2
C7588 1000P
C7503 50V 0.22
Q7502 2SD636 (SIMUL(H) :ON)
R7542 47K
C7520 6V220
QR7505 DTA144EA (AMP)
QR7506 DTC144EA (INV.)
TP7519
C7588 330P
C7515 6.3V47
L7501 220μ
R7534 1800
C7511 6.3V 220
C7512 0.1
C7504 22P
R7503 220K
X7502 VSX0094-A,C,E
C7505 33P
IC7501 MN15283VPY
VSS
XO
XI
P00
P01
P02
P03
P10
R11
P12
P13
SYNC
RST
IRQ
P50
P51
P52
P53
SBT
SBD
P20
P21
P22
P23
P30
P31
P32
P33
P40
P41
P42
P43
OSC 1
OSC 2
VDD
SEG 0
SEG 1
SEG 2
SEG 3
SEG 4
SEG 5
SEG 6
SEG 7
SEG 8
GRID F
GRID E
GRID D
GRID C
GRID B
GRID A
GRID 9
GRID 8
GRID 7
GRID 6
GRID 5
GRID 4
GRID 3
GRID 2
GRID 1
GRID 0
VPP
DAC
BUZZER
P60
R7537 47K
C7523 68P
R7512 47K
R7536 10K
R7511 47K
D7522 MA165 (ANT)
D7521 MA165 (DAY)
D7528 MA165 (BP)
D7527 MA165 (BN1)
D7528 MA165 (BN2)
D7529 MA165 (G/R)
D7535 MA165 (86/87)
D7534 MA165 (AS/MS)
D7540 MA165
D7538 MA165
QR7502 DTC144EA (TUNER (L) : OFF)
R7515 3300
R7521 10K
R7530 1800
R7531 1800
R7532 1800
R7533 1800
R7523 47K
QR7511 DTC144EA (BUFFER)
D7502 MA165
D7501 ERA1501V5
IC7505 MN1280T (RESET)
QR7503 DTA124EA (POWER ON : ON)
C7507 0.1
Q7501 2SD637 (POWER ON :ON)
R7510 22K
R7509 1K
R7508 47
C7514 0.01
R7535 100
D7561 MA165
R7520 10K
R7522 10K
IC7502 MN1226
C3
GND
OUT
VSS
C2
C1
PCLR
VMM
TIMER CLOCK
C7502 30P
R7501 1200
X7501 VSX0140-A or VSX0140-B
C7501 8P
DP7501 VSL0113-A,B
VTR
CATV
SP
LP
SU
MO
TU
WE
TH
FR
SA
VPS
OTR
ON
REC
X2
COUNT
REMAIN
OFF
C7524 100P
C7525 100P
C7510 50V22
D7503 MA4075
R7507 100K
R7538 220
C7527 56P
C7526 100P
R7549 8.2 (1/2W)
R7548 120
S-VHS
D7520 D7519 LN31GCPUHL×2
INSERT
D7518 LN81RCPHL
D7517 LN81RCPHL
A.DUB
P7505 (TO CH SELECT)
7 GND P7403-7
6 AFC DEF (H) P7403-6
5 BAND VL P7403-5
4 AUDIO DEF (S) P7403-4
3 BAND U P7403-3
2 AUDIO DEF (L) P7403-2
1 ——— P7403-1
P7506 (TO CH SELECT)
1 ——— P7404-1
2 INSERT (H) P7404-2
3 HEATER DC (+) P7404-3
4 BACK UP 5V P7404-4
5 REG -29V P7404-5
6 REG 6V P7404-6
7 GND P7404-7
8 S-VHS LED (H) P7404-8
9 DAC P7404-9
10 HEATER DC (-) P7404-10
11 BUZZER P7404-11
12 A.DUB (H) P7404-12
13 ——— P7404-13

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

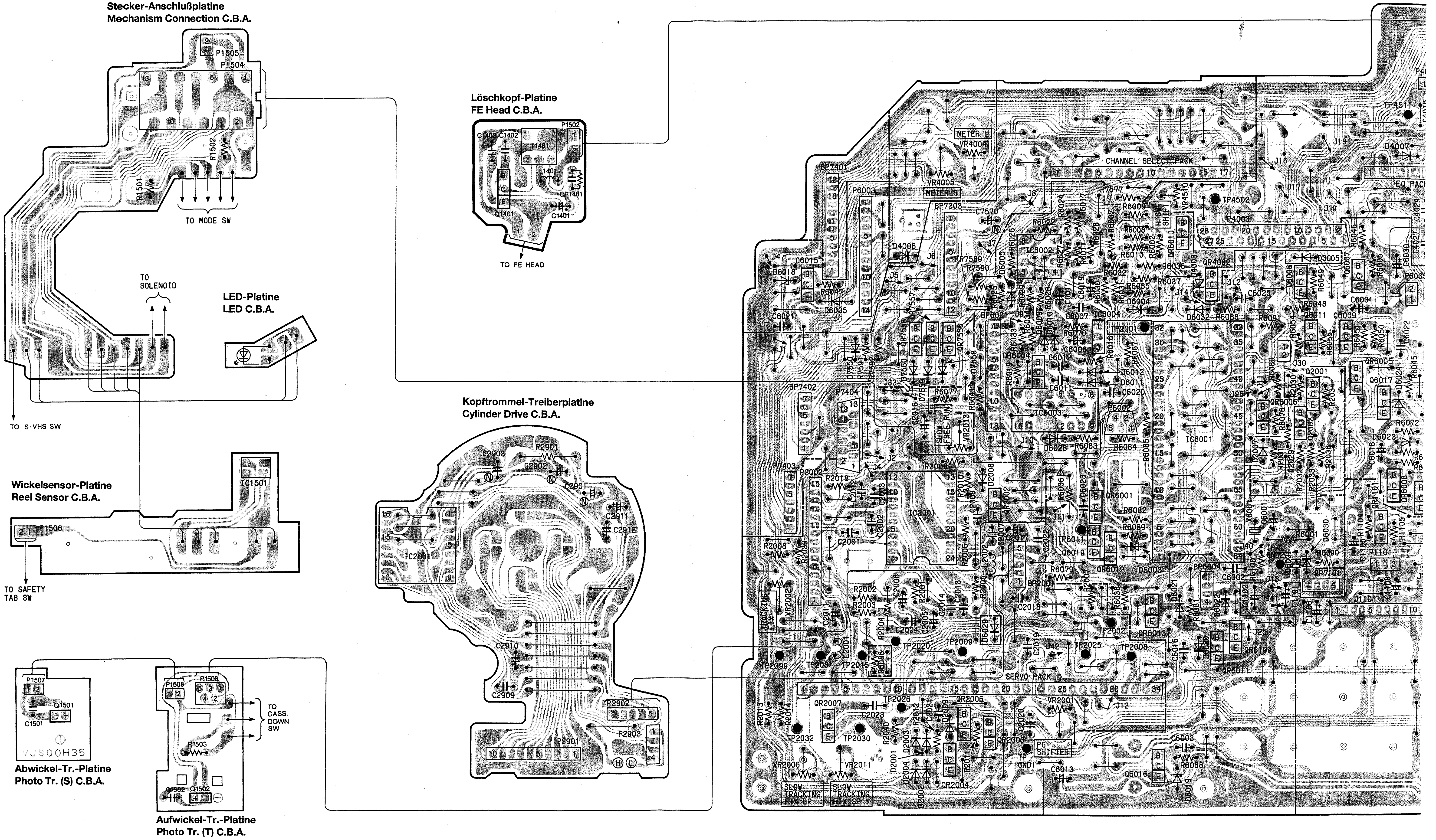
Timerplatine
Timer C.B.A.

Infrarot-Empfängerplatine
IR Receiver C.B.A.

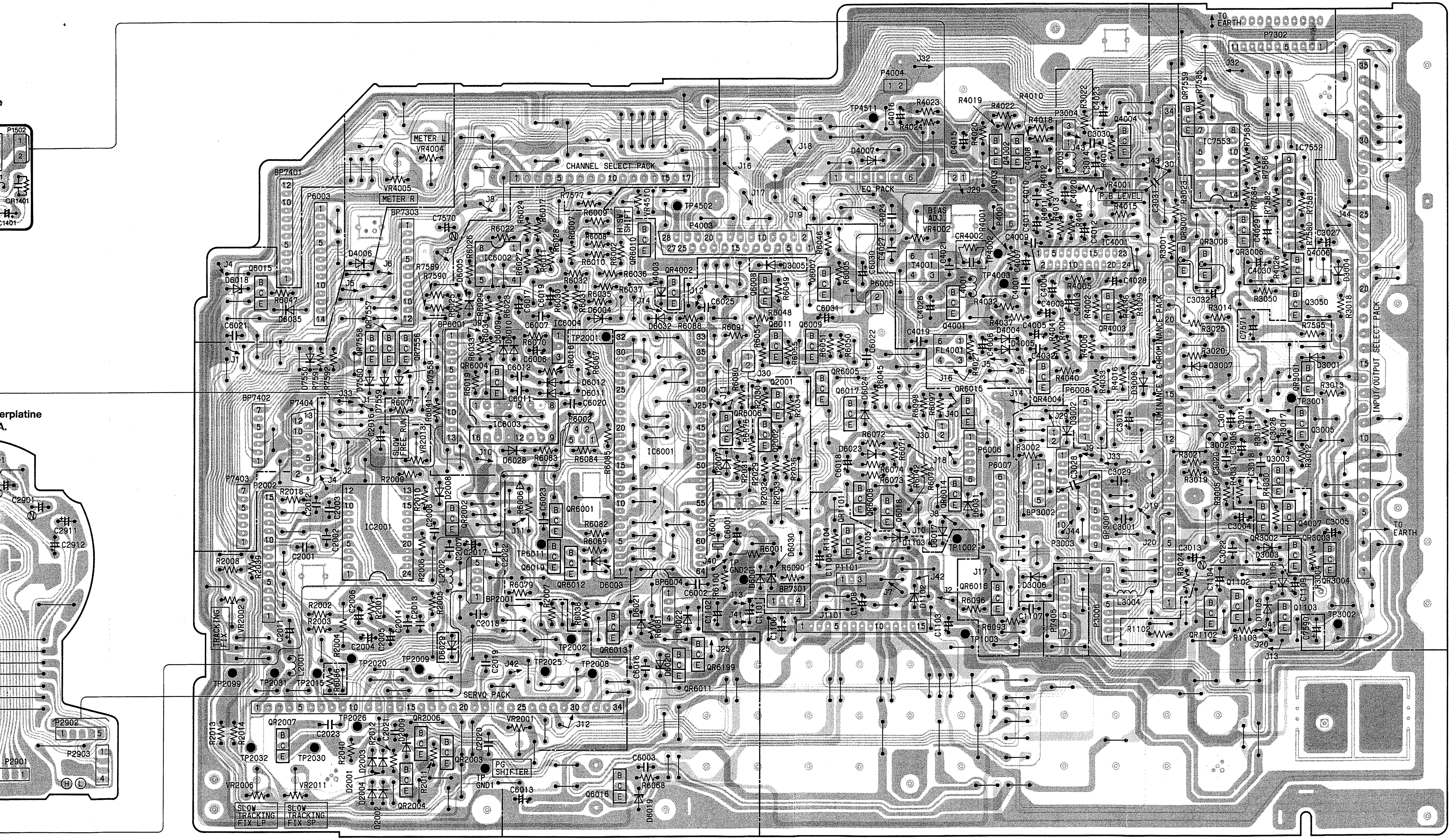

R6701
C6701
D6701
C6703
IR TUNNING
R6702
VR6701
C6702
C6704
IC6701
1
5
8
1
2
3


TP7517
TP7519
TP7518
P7507
P7504
R7511
R7512
P7506
D7519
D7520
S.VHS
C7510
L7501
C7515
P7503
C7505
R7503
C7523
C7504
R7537
R7536
D7501
D7502
R7548
D7503
R7507
C7527
QR7506
C7586
C7588
QR7505
LEVEL METER UNIT
C7503
IC7504
X7502
IC7501
C7511
C7501
C7512
X7501
R7501
C7502
R7522
TIMER CLOCK
R7531
R7530
R7533
R7534
R7532
D7513
R7542
Q7502
D7529
D7510
TP7515
R7538
R7535
C7520
DP7501
D7521
D7534
D7535
D7522
VR7501
REC VR
R7549
D7518
INSERT
C7507
R7510
Q7501
R7508
R7509
D7540
D7517
A.DUB
D7511
D7526
D7512
D7507
D7506
D7508
TP7516
R7520
IC7502
C7514
R7523
R7521
R7515
C7526
C7524
P7505
D7527
P7502
P7501
QR7503
IC7505
QR7511
D7538
QR7502
C7525
D7528
D7509

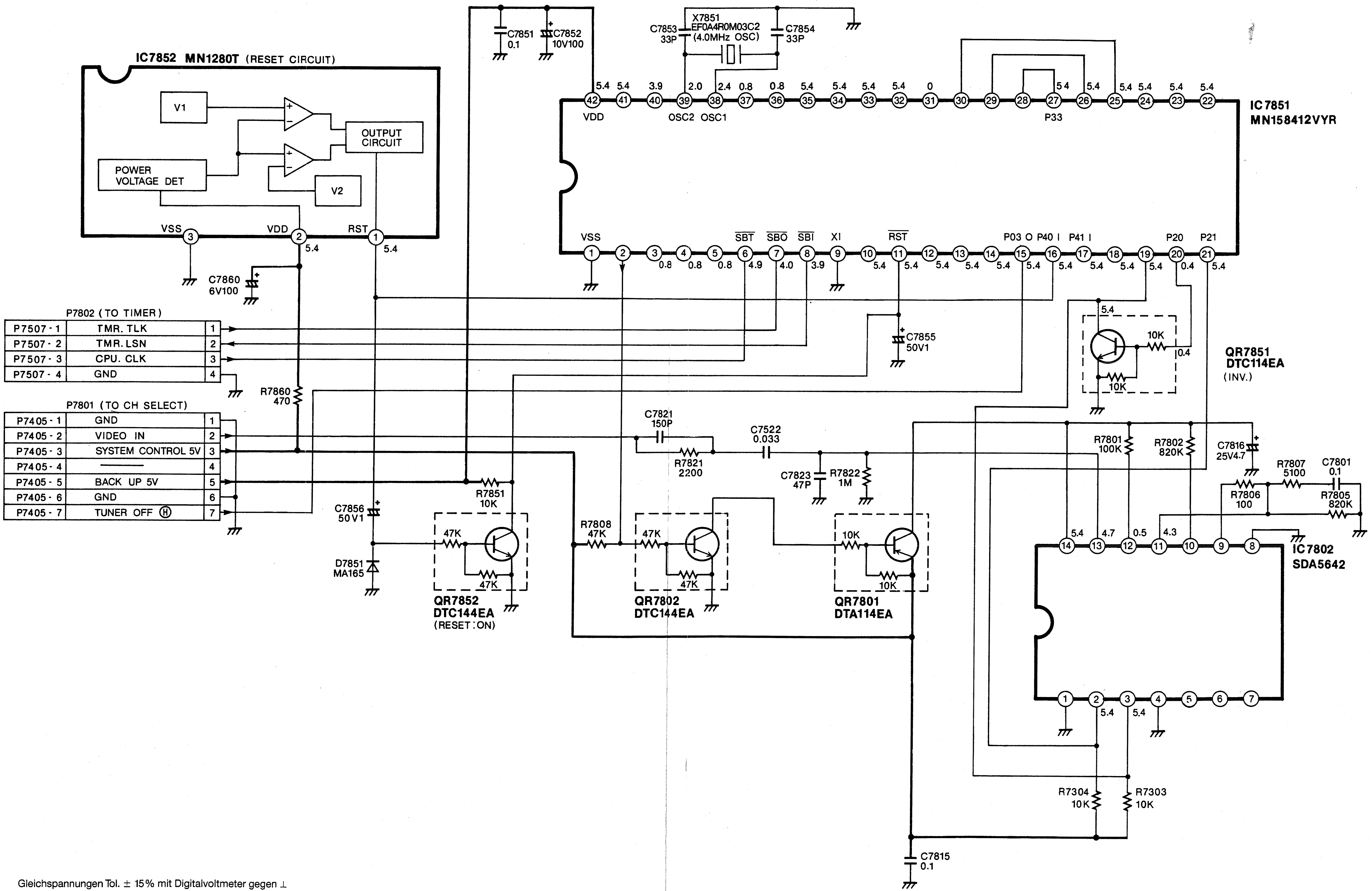
Hauptplatine
Main C.B.A.


Stecker-Anschlußplatine
Mechanism Connection C.B.A.
P1505
P1504
R1502
R1501
TO MODE SW
TO SOLENOID
TO S-VHS SW
Löschkopf-Platine
FE Head C.B.A.
C1403
C1402
T1401
P1502
L1401
CR1401
Q1401
C1401
TO FE HEAD
LED-Platine
LED C.B.A.
Wickelsensor-Platine
Reel Sensor C.B.A.
IC1501
P1506
TO SAFETY TAB SW
Kopftrommel-Treiberplatine
Cylinder Drive C.B.A.
C2903
R2901
C2902
C2901
C2911
C2912
IC2901
C2910
C2909
P2902
P2903
P2901
P1507
Q1501
C1501
VJB00H35
Abwickel-Tr.-Platine
Photo Tr. (S) C.B.A.
P1508
P1503
R1503
C1502
Q1502
TO CASS. DOWN SW
Aufwickel-Tr.-Platine
Photo Tr. (T) C.B.A.
METER L
VR4004
VR4005
METER R
BP7401
BP7303
P6003
CHANNEL SELECT PACK
TP4502
P4003
TP4511
D4007
J16
J17
J18
J19
EQ PACK
IC6002
IC6004
IC6003
IC6001
TP2001
BP6001
BP7402
P7404
P7403
P2002
SLOW FREE RUN
VR2013
IC2001
R2009
QR6001
X6001
TP6011
BP6004
BP7301
P1101
J1101
TRACKING FIX
VR2002
TP2099
TP2031
TP2015
TP2020
TP2009
TP2002
TP2025
TP2008
SERVO PACK
QR2007
TP2026
QR2006
VR2001
TP2032
TP2030
QR2003
PG SHIFTER
TP GND1
C6003
R6068
Q6016
D6019
VR2006
VR2011
SLOW TRACKING FIX LP
SLOW TRACKING FIX SP
QR2004

Hauptplatine
Main C.B.A.

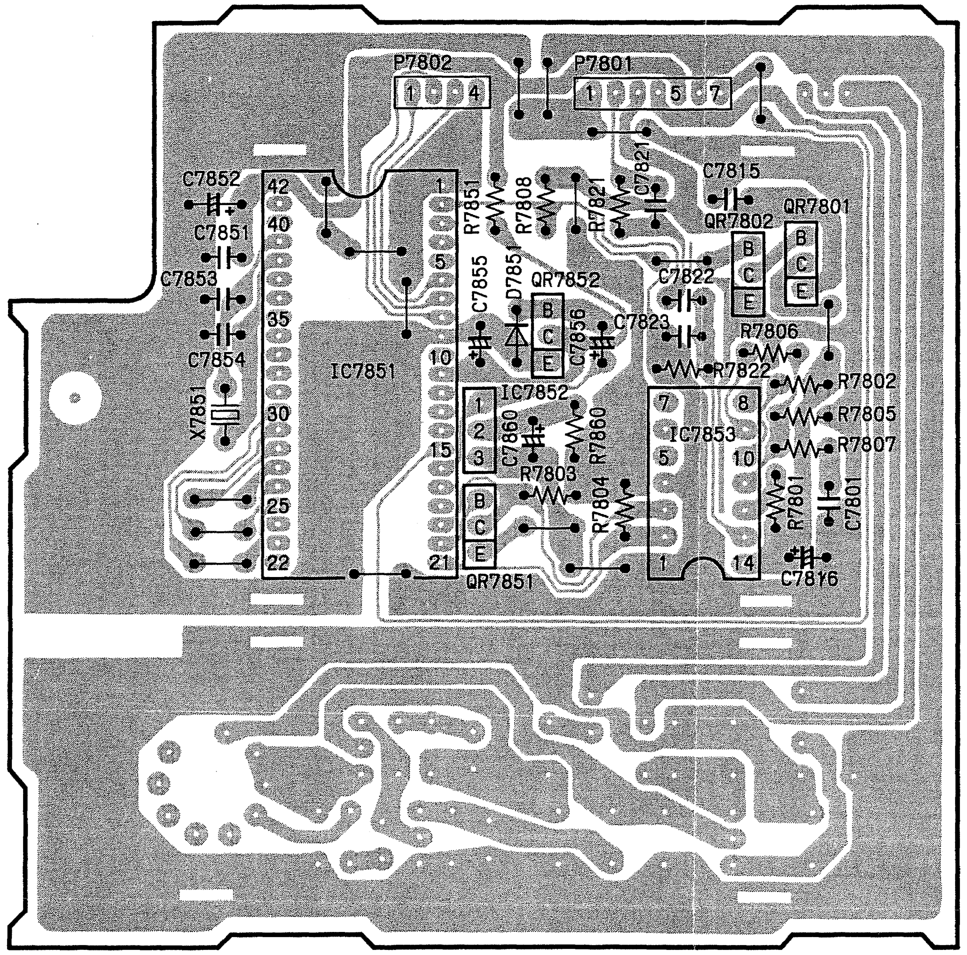

erplatine
A.
P1502
CR1401
C1401
CHANNEL SELECT PACK
METER L
METER R
VR4004
VR4005
EQ PACK
BIAS ADJ
VR4002
P.B LEVEL
VR4001
H.SW SHIFT
IC6001
IC6002
IC6003
IC6004
IC2001
IC4001
IC7552
IC7553
FL4001
T4001
SERVO PACK
PG SHIFTER
TRACKING FIX
VR2002
SLOW TRACKING FIX LP
SLOW TRACKING FIX SP
VR2006
VR2011
VR2001
SLOW FREE RUN
VR2013
LUMINANCE & CHROMINANCE PACK
INPUT/OUTPUT SELECT PACK
TO EARTH
P7302
P2901
P2902
P2903
TP GND1
TP GND2
TP2099
TP2031
TP2015
TP2020
TP2009
TP2025
TP2008
TP2002
TP2026
TP2032
TP2030
TP6011
TP2001
TP4502
TP4511
TP4002
TP4003
TP3001
TP3002
TP1002
TP1003

Schaltbild VPS-Teil
VPS Schematic Diagram

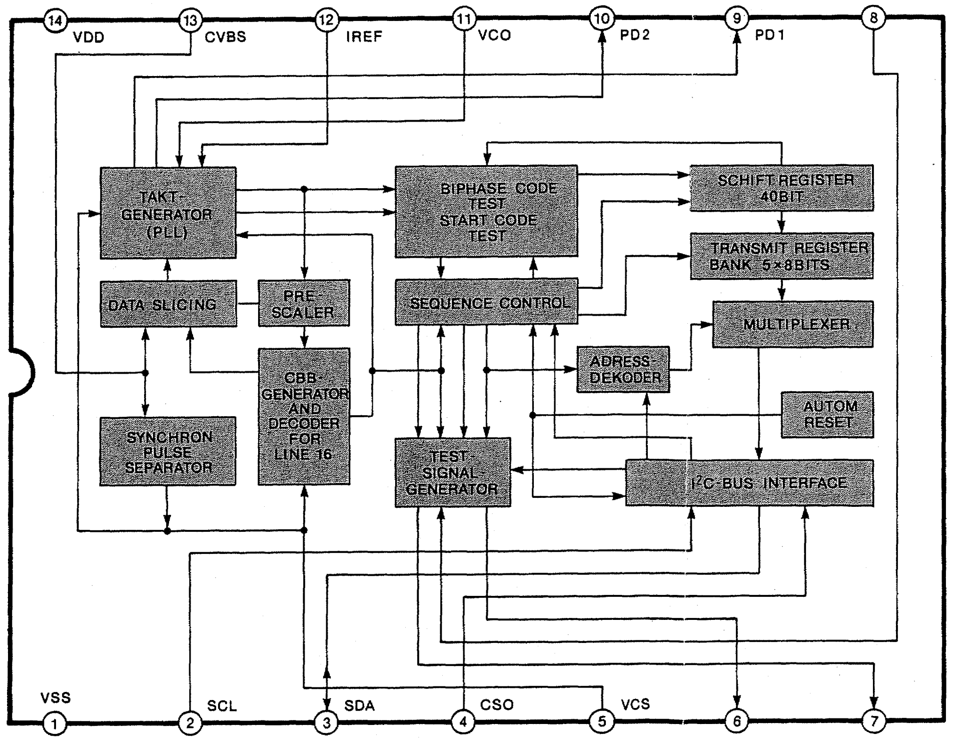

IC7852 MN1280T (RESET CIRCUIT)
V1
V2
OUTPUT CIRCUIT
POWER VOLTAGE DET
VSS
VDD
RST
C7860 6V100
C7851 0.1
C7852 10V100
C7853 33P
C7854 33P
X7851 EF0A4R0M03C2 (4.0MHz OSC)
VDD
OSC2
OSC1
P33
IC7851 MN158412VYR
VSS
SBT
SBO
SBI
XI
RST
P03 O
P40 I
P41 I
P20
P21
C7855 50V1
QR7851 DTC114EA (INV.)
10K
P7802 (TO TIMER)
P7507 - 1 TMR. TLK
P7507 - 2 TMR. LSN
P7507 - 3 CPU. CLK
P7507 - 4 GND
P7801 (TO CH SELECT)
P7405 - 1 GND
P7405 - 2 VIDEO IN
P7405 - 3 SYSTEM CONTROL 5V
P7405 - 4
P7405 - 5 BACK UP 5V
P7405 - 6 GND
P7405 - 7 TUNER OFF Ⓗ
R7860 470
R7851 10K
C7856 50V1
D7851 MA165
QR7852 DTC144EA (RESET : ON)
47K
R7808 47K
QR7802 DTC144EA
QR7801 DTA114EA
C7821 150P
R7821 2200
C7522 0.033
C7823 47P
R7822 1M
R7801 100K
R7802 820K
C7816 25V4.7
R7807 5100
C7801 0.1
R7806 100
R7805 820K
IC7802 SDA5642
R7304 10K
R7303 10K
C7815 0.1

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop“).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Platine VPS-Teil
VPS Pack C.B.A.

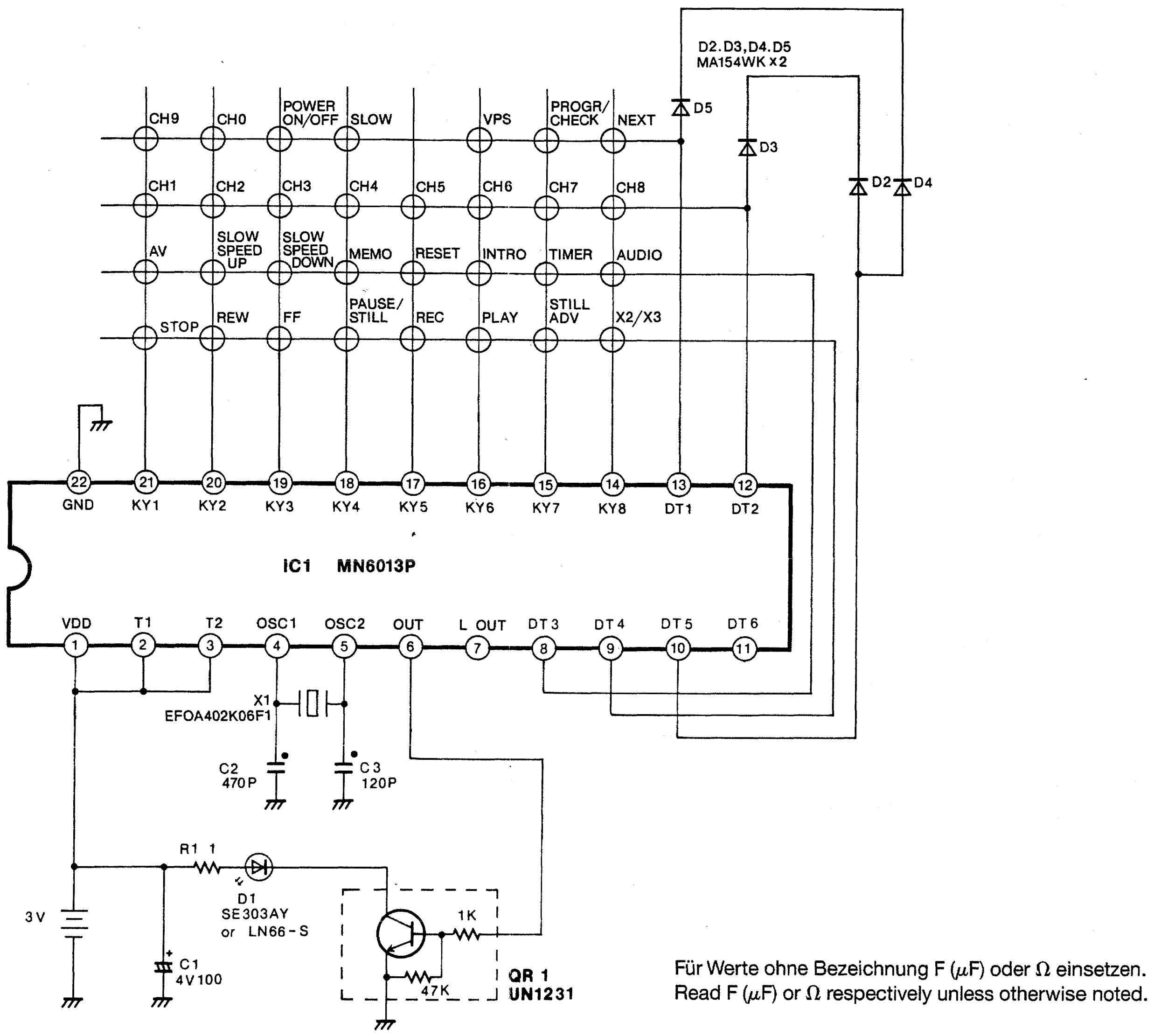

P7802
1
4
P7801
1
5
7
C7852
C7851
C7853
C7854
X7851
42
40
35
30
25
22
IC7851
1
5
10
15
21
R7851
R7808
R7821
C7821
C7815
QR7802
QR7801
B
C
E
C7855
D7851
QR7852
C7856
C7822
C7823
R7806
R7822
R7802
R7805
R7807
IC7852
C7860
R7860
R7803
R7804
QR7851
IC7853
7
8
10
1
14
R7801
C7801
C7816

Blockdarstellung des VPS-IC's SDA 5642
Block-Diagram of VPS IC SDA 5642


14 VDD
13 CVBS
12 IREF
11 VCO
10 PD2
9 PD1
8
TAKT-GENERATOR (PLL)
BIPHASE CODE TEST START CODE TEST
SCHIFT REGISTER 40BIT
TRANSMIT REGISTER BANK 5×8BITS
DATA SLICING
PRE-SCALER
SEQUENCE CONTROL
MULTIPLEXER
ADRESS-DEKODER
CBB-GENERATOR AND DECODER FOR LINE 16
AUTOM RESET
SYNCHRON PULSE SEPARATOR
TEST-SIGNAL-GENERATOR
I²C-BUS INTERFACE
VSS 1
SCL 2
SDA 3
CSO 4
VCS 5
6
7

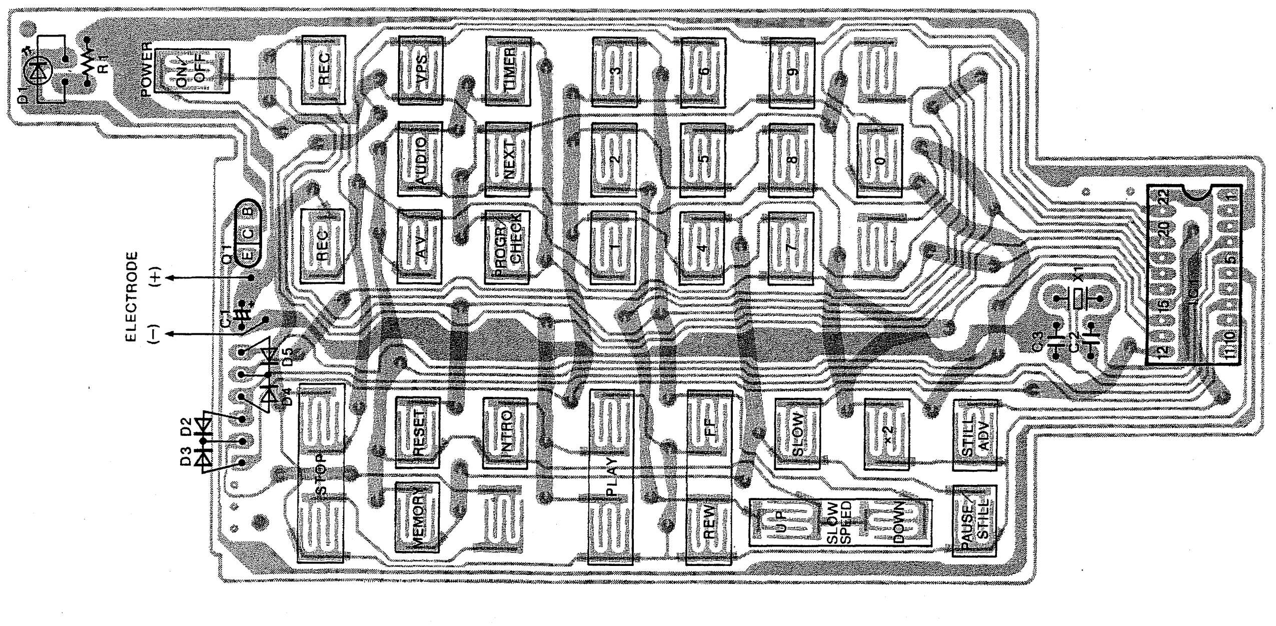
Schaltbild IR-Fernbedienung
IR Remote Control Schematic Diagram

8 619 499 800

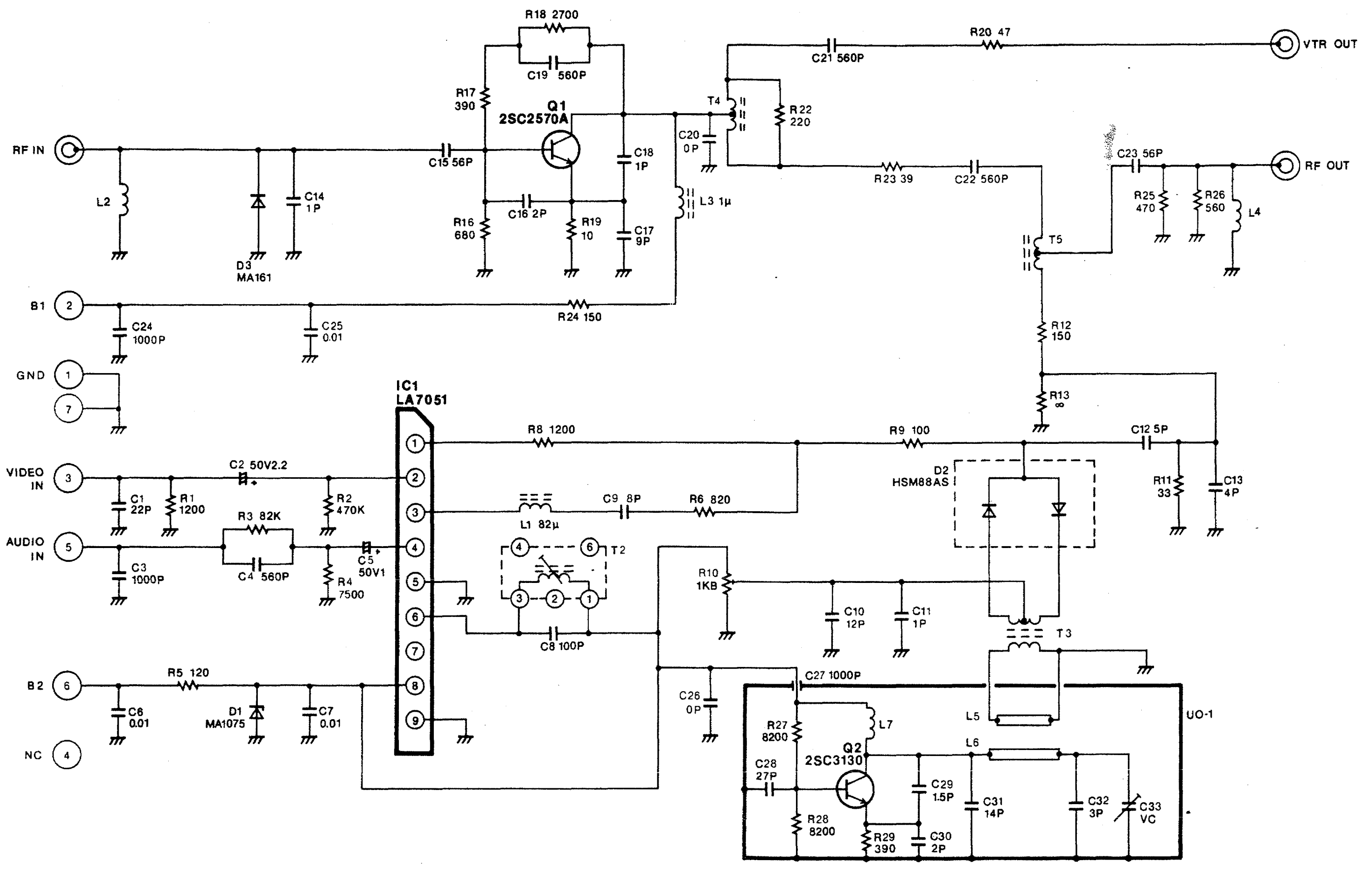

D2.D3,D4.D5
MA154WK x2
D5
D3
D2
D4
CH9
CH0
POWER ON/OFF
SLOW
VPS
PROGR/ CHECK
NEXT
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
AV
SLOW SPEED UP
SLOW SPEED DOWN
MEMO
RESET
INTRO
TIMER
AUDIO
STOP
REW
FF
PAUSE/ STILL
REC
PLAY
STILL ADV
X2/X3
GND
KY1
KY2
KY3
KY4
KY5
KY6
KY7
KY8
DT1
DT2
IC1 MN6013P
VDD
T1
T2
OSC1
OSC2
OUT
L OUT
DT3
DT4
DT5
DT6
X1
EFOA402K06F1
C2 470P
C3 120P
R1 1
D1
SE303AY
or LN66-S
3V
C1 4V100
1K
47K
QR 1
UN1231

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

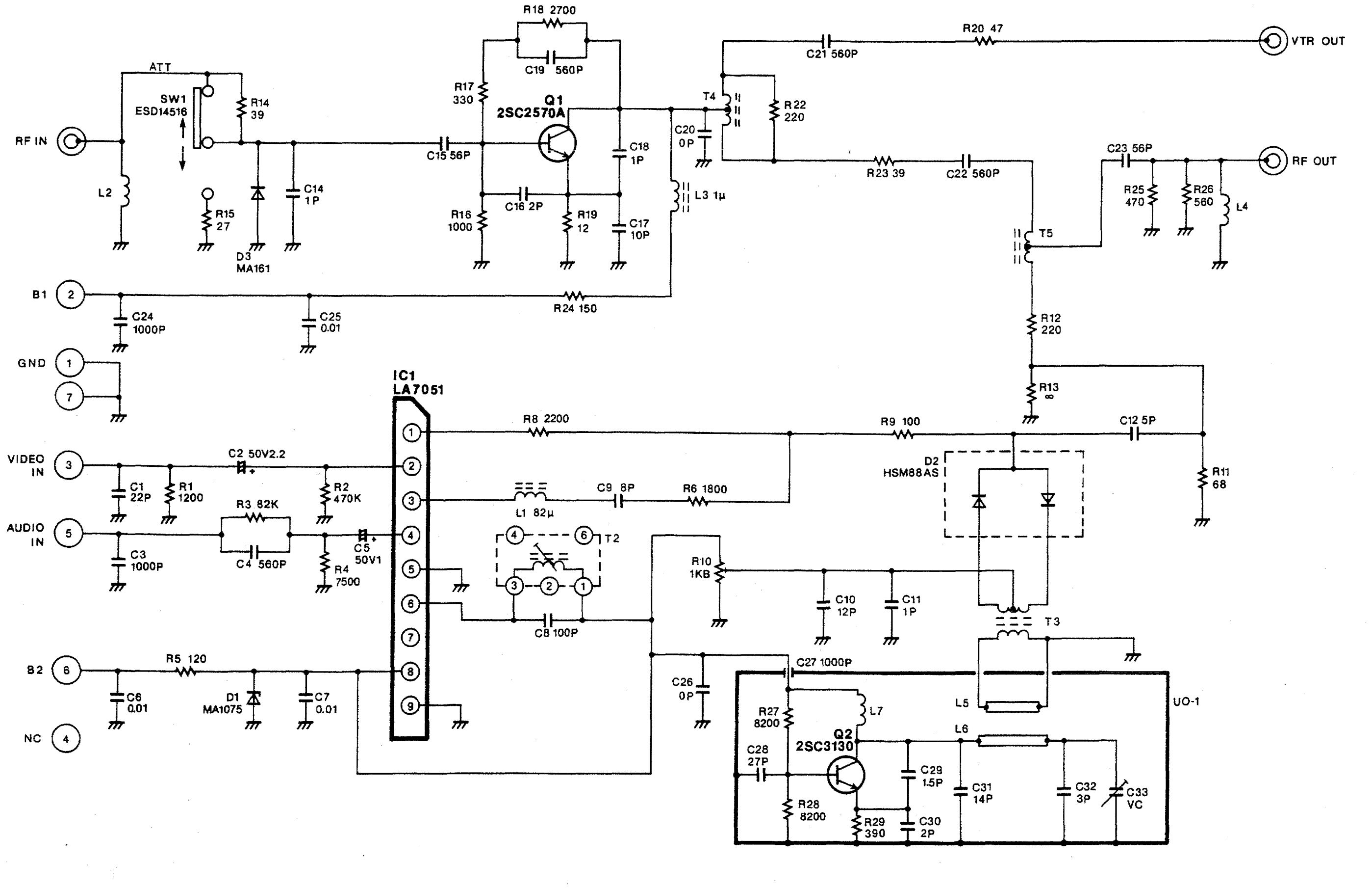
Platine der Infrarot-Fernbedienung
IR Remote Controller Circuit Board


POWER
ON/OFF
REC
VPS
TIMER
AUDIO
NEXT
AV
PROGR/CHECK
ELECTRODE
(+)
(−)
Q1
E C B
C1
D1
R1
D2
D3
D4
D5
C2
C3
X1
RESET
INTRO
STOP
MEMORY
PLAY
REW
FF
SLOW
UP
SLOW SPEED
DOWN
×2
STILL ADV
PAUSE/STILL

Schaltbild HF-Konverter und Ant.-Anschluß (EGC)
RF Converter und Ant. Terminal Schematic Diagram (EGC)

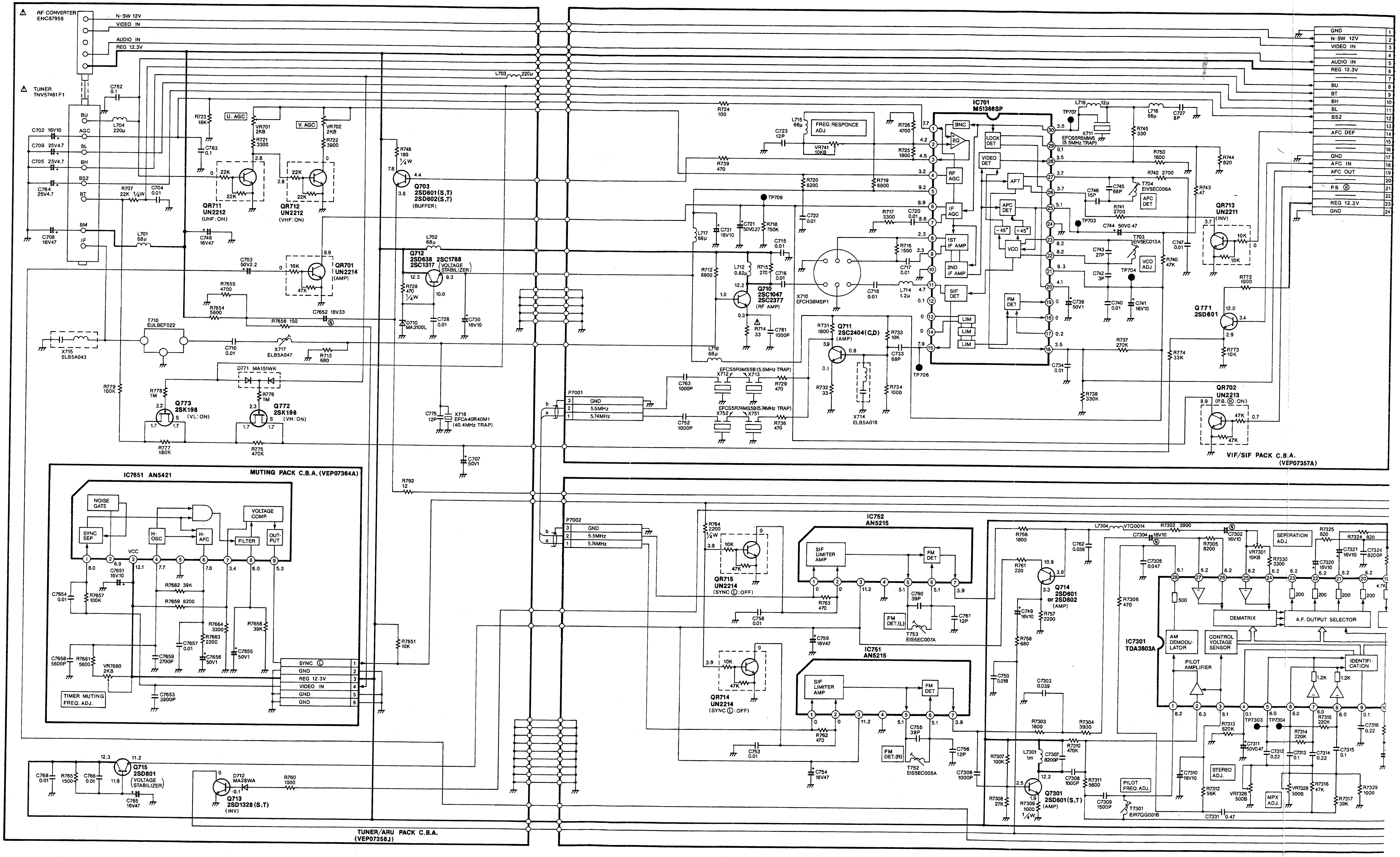

R18 2700
C19 560P
R17 390
Q1 2SC2570A
C18 1P
R16 680
C16 2P
R19 10
C17 9P
C15 56P
RF IN
L2
D3 MA161
C14 1P
T4
R22 220
C20 0P
L3 1μ
C21 560P
R20 47
VTR OUT
R23 39
C22 560P
C23 56P
RF OUT
R25 470
R26 560
L4
T5
B1
C24 1000P
C25 0.01
R24 150
R12 150
R13 ∞
GND
IC1 LA7051
VIDEO IN
C1 22P
R1 1200
C2 50V2.2
R2 470K
R8 1200
R9 100
C12 5P
D2 HSM88AS
R11 33
C13 4P
L1 82μ
C9 8P
R6 820
AUDIO IN
R3 82K
C4 560P
C3 1000P
C5 50V1
R4 7500
T2
R10 1KB
C10 12P
C11 1P
C8 100P
T3
B2
R5 120
C6 0.01
D1 MA1075
C7 0.01
NC
C26 0P
C27 1000P
R27 8200
L7
L5
L6
Q2 2SC3130
C28 27P
C29 1.5P
C31 14P
C32 3P
C33 VC
R28 8200
R29 390
C30 2P
UO-1

Schaltbild HF-Konverter und Ant.-Anschluß (ECV)
RF Converter und Ant. Terminal Schematic Diagram (ECV)


R18 2700
C19 560P
R17 330
Q1 2SC2570A
ATT
SW1 ESD14516
R14 39
C18 1P
R16 1000
C16 2P
R19 12
C17 10P
C15 56P
RF IN
L2
R15 27
D3 MA161
C14 1P
T4
R22 220
C20 0P
L3 1μ
C21 560P
R20 47
VTR OUT
R23 39
C22 560P
C23 56P
RF OUT
R25 470
R26 560
L4
T5
B1
C24 1000P
C25 0.01
R24 150
R12 220
R13 ∞
GND
IC1 LA7051
VIDEO IN
C1 22P
R1 1200
C2 50V2.2
R2 470K
R8 2200
R9 100
C12 5P
D2 HSM88AS
R11 68
L1 82μ
C9 8P
R6 1800
AUDIO IN
R3 82K
C4 560P
C3 1000P
C5 50V1
R4 7500
T2
R10 1KB
C10 12P
C11 1P
C8 100P
T3
B2
R5 120
C6 0.01
D1 MA1075
C7 0.01
NC
C26 0P
C27 1000P
R27 8200
L7
L5
L6
Q2 2SC3130
C28 27P
C29 1.5P
C31 14P
C32 3P
C33 VC
R28 8200
R29 390
C30 2P
UO-1

Schaltbild TV-Demodulator (EGC)
TV Demodulator Unit Schematic Diagram (EGC)

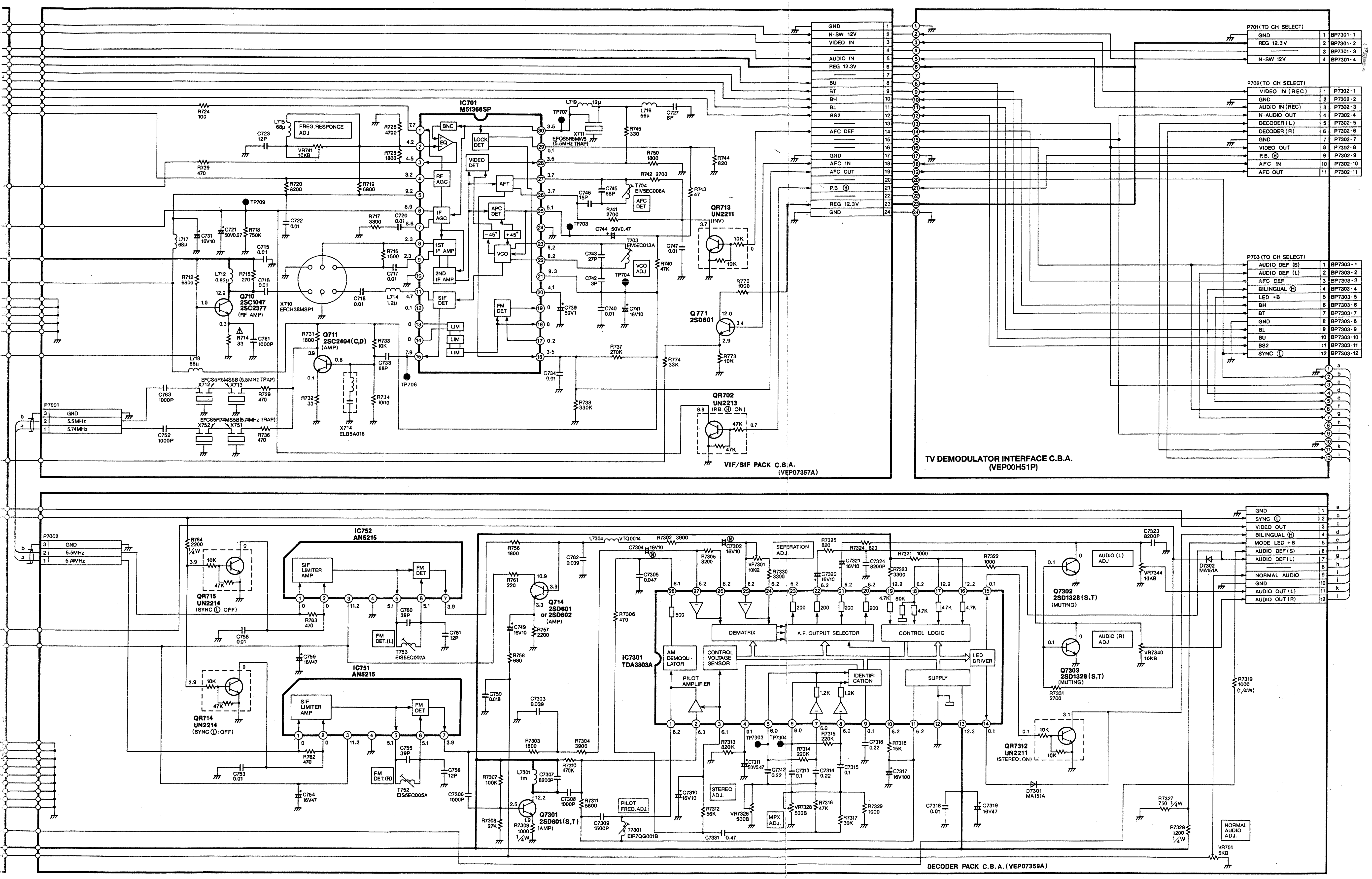
Schaltbi
TV Dem


RF CONVERTER ENC87956
N-SW 12V
VIDEO IN
AUDIO IN
REG 12.3V
TUNER TNV57481F1
BU
AGC
BL
BH
BS2
BT
BM
IF
U. AGC
V. AGC
QR711 UN2212 (UHF: ON)
QR712 UN2212 (VHF: ON)
QR701 UN2214 (AMP)
Q703 2SD601(S,T) 2SD602(S,T) (BUFFER)
Q712 2SD638 2SC1788 2SC1317 (VOLTAGE STABILIZER)
T710 EULBEF022
X715 ELB5A043
X717 ELB5A047
D771 MA151WK
Q773 2SK198 (VL: ON)
Q772 2SK198 (VH: ON)
D710 MA3100L
X716 EFCA40R40M1 (40.4MHz TRAP)
IC7651 AN5421
MUTING PACK C.B.A. (VEP07364A)
NOISE GATE
SYNC SEP
H-OSC
H-AFC
FILTER
VOLTAGE COMP.
OUT-PUT
TIMER MUTING FREQ. ADJ.
SYNC ①
GND
REG 12.3V
VIDEO IN
GND
GND
Q715 2SD601 (VOLTAGE STABILIZER)
D712 MA28WA
Q713 2SD1328(S,T) (INV)
TUNER/ARU PACK C.B.A. (VEP07358J)
P7001
GND
5.5MHz
5.74MHz
P7002
IC701 M51366SP
FREQ. RESPONCE ADJ
BNC
EQ
LOCK DET
VIDEO DET
RF AGC
IF AGC
1ST IF AMP
2ND IF AMP
SIF DET
LIM
AFT
APC DET
VCO
FM DET
VCO ADJ
AFC DET
Q710 2SC1047 2SC2377 (RF AMP)
X710 EFCH38MSP1
Q711 2SC2404(C,D) (AMP)
X714 ELB5A016
EFCS5R5MS5B (5.5MHz TRAP)
EFCS5R74MS5B (5.74MHz TRAP)
X711 EFCS5R5MW5 (5.5MHz TRAP)
T704 EIV5EC006A
T703 EIV5EC013A
QR713 UN2211 (INV)
Q771 2SD601
QR702 UN2213 (P.B. Ⓗ: ON)
VIF/SIF PACK C.B.A. (VEP07357A)
GND
N-SW 12V
VIDEO IN
AUDIO IN
REG 12.3V
BU
BT
BH
BL
BS2
AFC DEF
GND
AFC IN
AFC OUT
P.B. Ⓗ
REG 12.3V
GND
QR715 UN2214 (SYNC ①: OFF)
QR714 UN2214 (SYNC ①: OFF)
IC752 AN5215
IC751 AN5215
SIF LIMITER AMP
FM DET
FM DET.(L)
FM DET.(R)
T753 EIS5EC007A
T752 EIS5EC005A
Q714 2SD601 or 2SD602 (AMP)
Q7301 2SD601(S,T) (AMP)
T7301 EIR7QG001B
IC7301 TDA3803A
SEPERATION ADJ.
DEMATRIX
A.F. OUTPUT SELECTOR
AM DEMODULATOR
CONTROL VOLTAGE SENSOR
PILOT AMPLIFIER
IDENTIFICATION
PILOT FREQ. ADJ.
STEREO ADJ.
MPX ADJ.

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop").
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Schaltbild TV-Demodulator (EGC)
TV Demodulator Unit Schematic Diagram (EGC)

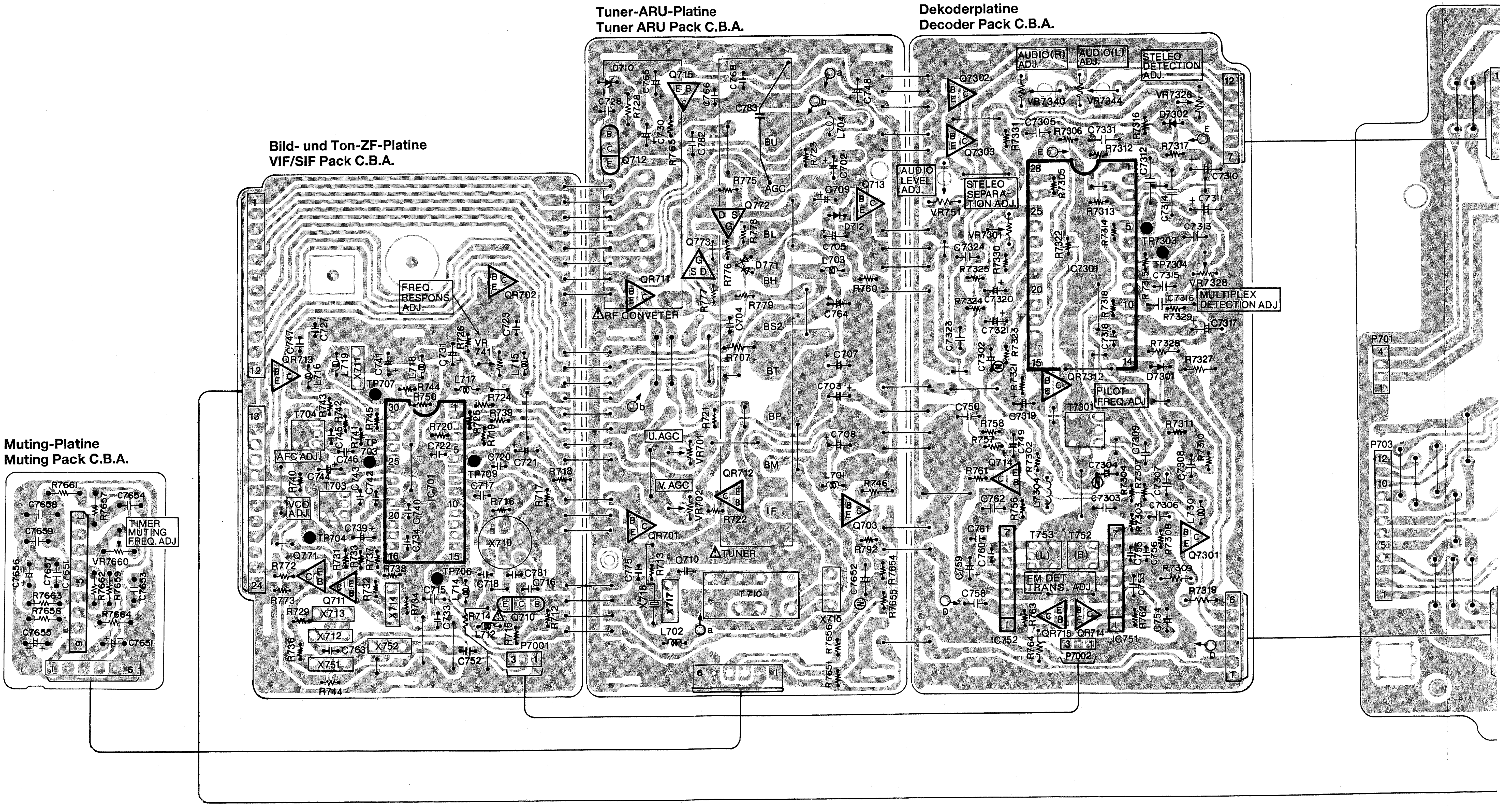


IC701 M51366SP
VIF/SIF PACK C.B.A. (VEP07357A)
TV DEMODULATOR INTERFACE C.B.A. (VEP00H51P)
DECODER PACK C.B.A. (VEP07359A)
P701 (TO CH SELECT)
P702 (TO CH SELECT)
P703 (TO CH SELECT)
P7001
P7002
Q710 2SC1047 2SC2377 (RF AMP)
Q711 2SC2404(C,D) (AMP)
Q771 2SD601
QR713 UN2211 (INV)
QR702 UN2213 (P.B. Ⓗ : ON)
IC752 AN5215
IC751 AN5215
QR715 UN2214 (SYNC Ⓛ : OFF)
QR714 UN2214 (SYNC Ⓛ : OFF)
Q714 2SD601 or 2SD602 (AMP)
Q7301 2SD601(S,T) (AMP)
IC7301 TDA3803A
Q7302 2SD1328 (S,T) (MUTING)
Q7303 2SD1328 (S,T) (MUTING)
QR7312 UN2211 (STEREO: ON)
FREQ. RESPONCE ADJ
SIF LIMITER AMP
FM DET
DEMATRIX
A.F. OUTPUT SELECTOR
CONTROL LOGIC
AM DEMODULATOR
CONTROL VOLTAGE SENSOR
PILOT AMPLIFIER
IDENTIFICATION
SUPPLY
LED DRIVER
SEPERATION ADJ.
STEREO ADJ.
MPX ADJ.
PILOT FREQ. ADJ.
AUDIO (L) ADJ
AUDIO (R) ADJ
NORMAL AUDIO ADJ.
GND
N·SW 12V
VIDEO IN
AUDIO IN
REG 12.3V
BU
BT
BH
BL
BS2
AFC DEF
AFC IN
AFC OUT
P.B Ⓗ
REG 12.3 V
VIDEO IN (REC)
AUDIO IN (REC)
N·AUDIO OUT
DECODER (L)
DECODER (R)
VIDEO OUT
AUDIO DEF (S)
AUDIO DEF (L)
BILINGUAL Ⓗ
LED +B
SYNC Ⓛ
MODE LED +B
NORMAL AUDIO
AUDIO OUT (L)
AUDIO OUT (R)
5.5MHz
5.74MHz

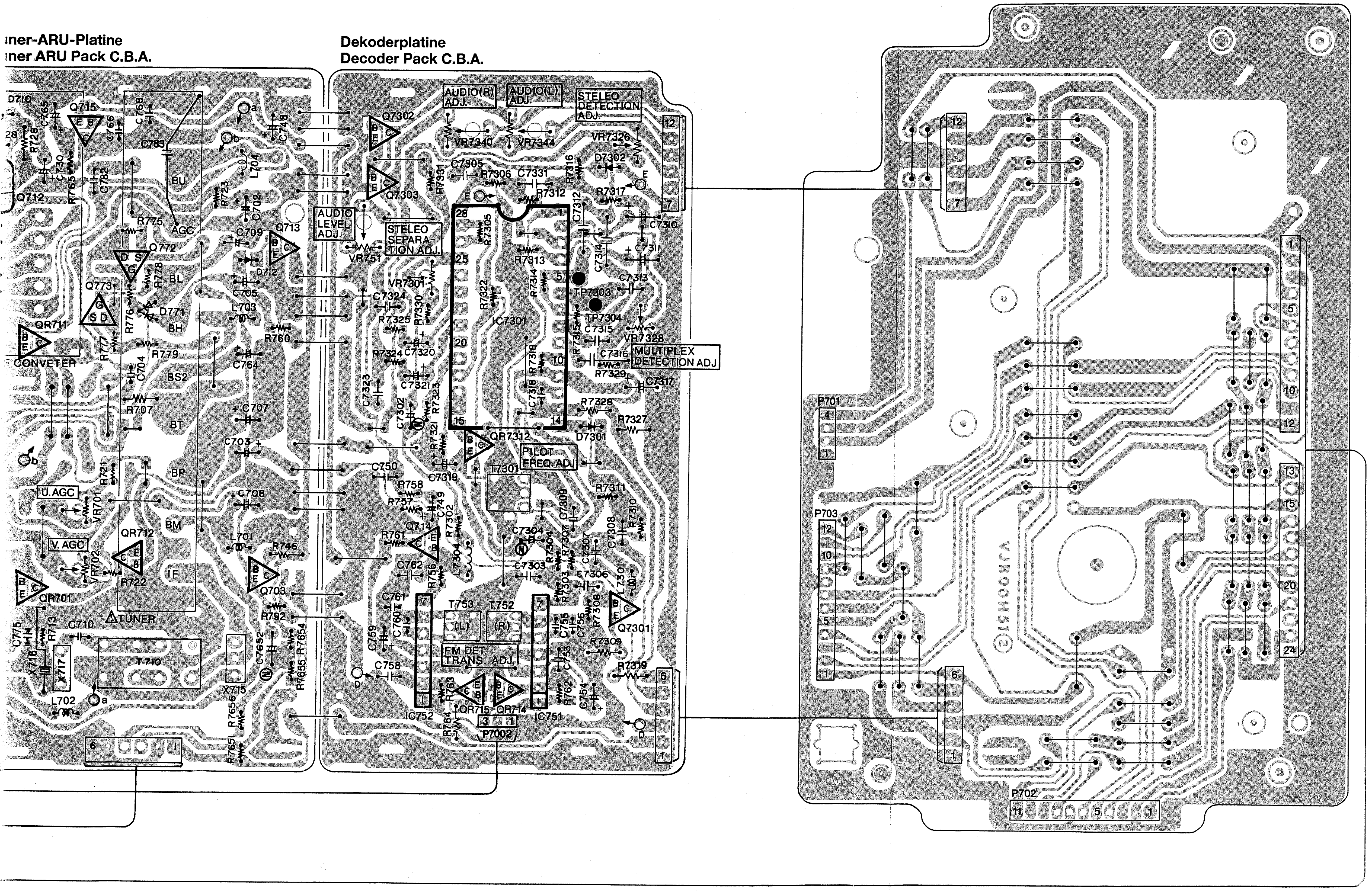
Für Werte ohne Bezeichnung F (µF) oder Ω einsetzen.
Read F (µF) or Ω respectively unless otherwise noted.

Platinen des TV-Demodulators (EGC)
TV Demodulator Circuit Boards (EGC)

Pla
TV


Tuner-ARU-Platine
Tuner ARU Pack C.B.A.
Dekoderplatine
Decoder Pack C.B.A.
Bild- und Ton-ZF-Platine
VIF/SIF Pack C.B.A.
Muting-Platine
Muting Pack C.B.A.
FREQ. RESPONS ADJ.
AFC ADJ.
VCO ADJ.
TIMER MUTING FREQ. ADJ
RF CONVETER
U. AGC
V. AGC
TUNER
AUDIO(R) ADJ.
AUDIO(L) ADJ.
STELEO DETECTION ADJ.
AUDIO LEVEL ADJ.
STELEO SEPARATION ADJ.
MULTIPLEX DETECTION ADJ
PILOT FREQ. ADJ
FM DET. TRANS. ADJ.
IC701
IC7301
IC752
IC751
IC7651
P701
P703
P7001
P7002

Platinen des TV-Demodulators (EGC)
TV Demodulator Circuit Boards (EGC)


ıner-ARU-Platine
ıner ARU Pack C.B.A.

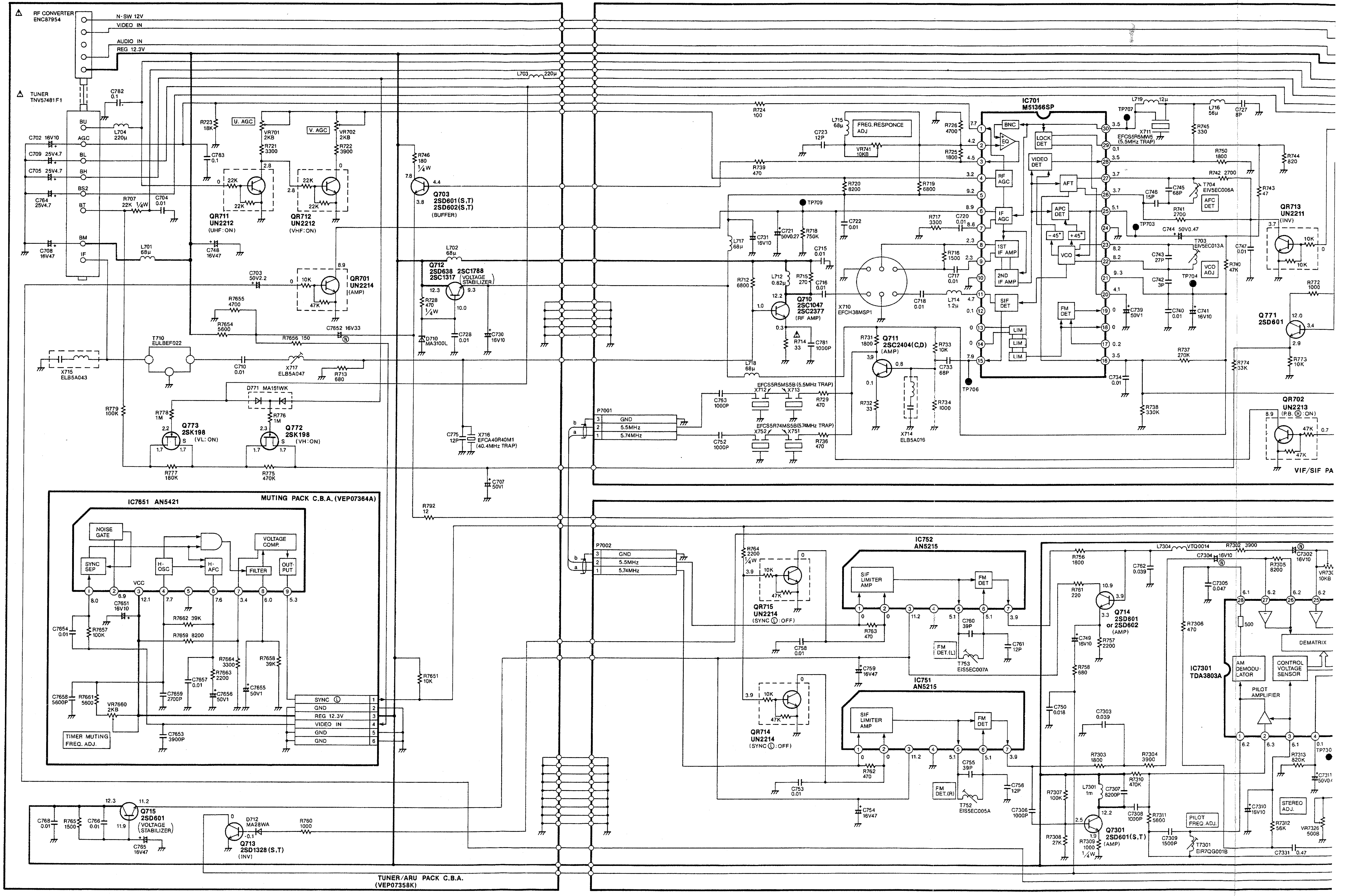
Dekoderplatine
Decoder Pack C.B.A.

TV-Demodulator Interface-Platine
TV Demodulator Interface C.B.A.

D710
Q715
C765
C766
C768
C783
R728
C730
R765
C782
Q712
BU
R723
C702
L704
C748
a
b
AGC
R775
Q713
C709
Q772
R778
D712
BL
C705
Q773
L703
R776
D771
BH
R760
QR711
R777
R779
C764
C704
CONVETER
BS2
R707
C707
BT
C703
b
BP
R721
C708
U.AGC
VR701
BM
QR712
L701
R746
V.AGC
VR702
R722
IF
Q703
R792
QR701
TUNER
C775
R713
C710
X716
X717
T710
C7652
R7654
R7655
X715
L702
a
R7656
R7651
6
1
Q7302
AUDIO(R) ADJ.
AUDIO(L) ADJ.
STELEO DETECTION ADJ.
12
VR7340
VR7344
VR7326
Q7303
R7331
C7305
R7306
C7331
R7316
D7302
E
R7312
R7317
AUDIO LEVEL ADJ.
STELEO SEPARATION ADJ.
VR751
28
R7305
1
C7312
C7310
7
R7313
C7314
C7311
25
VR7301
C7324
R7322
R7314
5
C7313
TP7303
TP7304
R7325
R7330
IC7301
C7315
VR7328
20
R7315
R7318
C7316
MULTIPLEX DETECTION ADJ
R7324
C7320
10
R7329
C7317
C7321
R7323
C7323
C7302
C7318
R7328
15
14
R7327
R7321
QR7312
D7301
PILOT FREQ. ADJ
C750
C7319
T7301
R758
R7311
R757
C7309
R7310
R749
Q714
R7302
C7304
C7308
R761
R7307
C762
L7304
C7307
R7304
C7303
C7306
L7301
R756
R7303
C761
T753
(L)
T752
(R)
7
R7308
Q7301
C760
C755
C756
C759
FM DET. TRANS. ADJ.
C753
R7309
C758
R7319
D
R763
C754
R762
QR715
QR714
R764
IC752
3
1
P7002
IC751
D
6
1
12
7
1
5
10
12
P701
4
1
13
15
P703
12
10
VJB00H51②
20
5
24
1
6
1
P702
11
5
1

Schaltbild TV-Demodulatorteil (ECV)
TV Demodulator Unit Schematic Diagram (ECV)

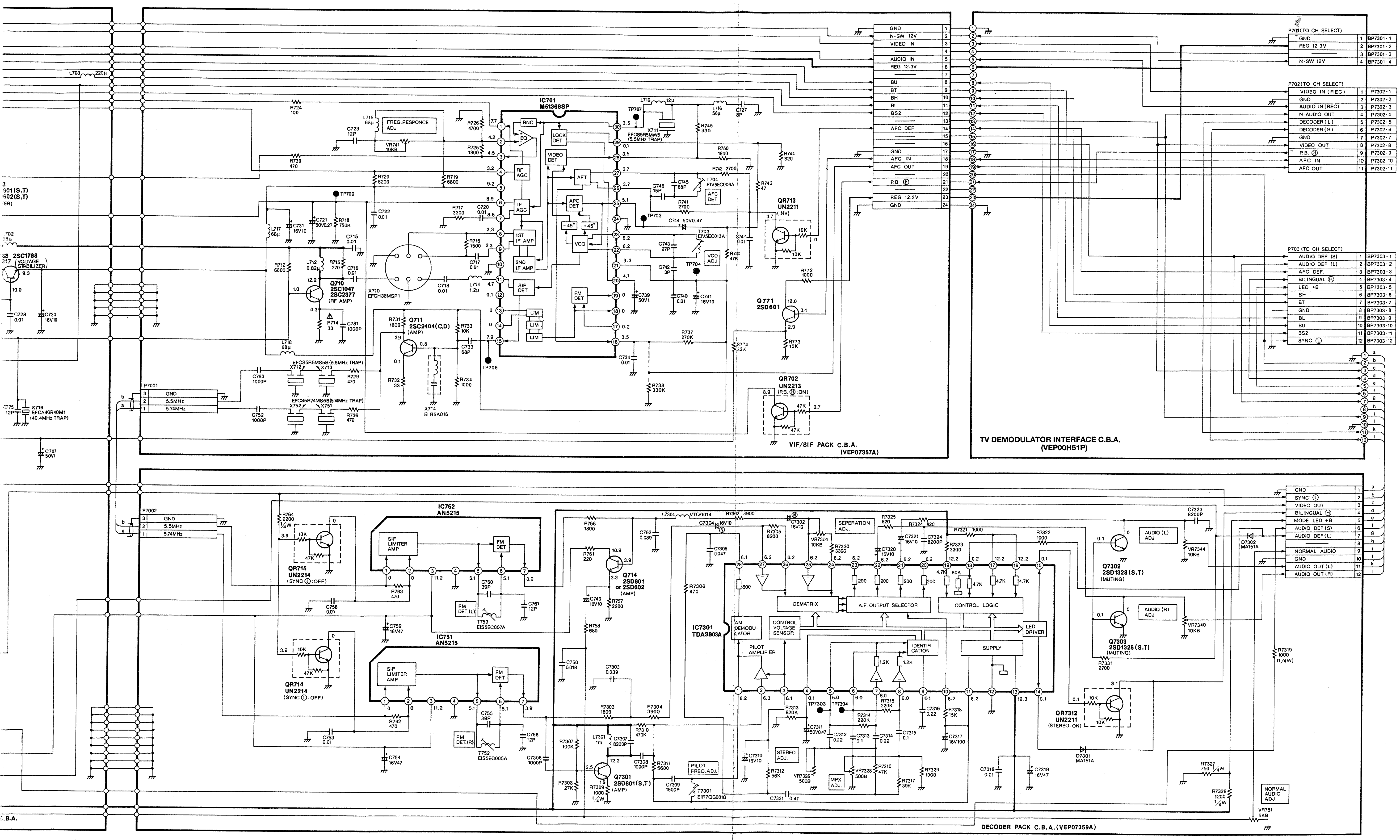
Schaltb
TV Dem


RF CONVERTER ENC87954
N-SW 12V
VIDEO IN
AUDIO IN
REG 12.3V
TUNER TNV57481F1
BU
AGC
BL
BH
BS2
BT
BM
IF
U. AGC
V. AGC
VR701 2KB
VR702 2KB
QR711 UN2212 (UHF: ON)
QR712 UN2212 (VHF: ON)
Q703 2SD601(S,T) 2SD602(S,T) (BUFFER)
QR701 UN2214 (AMP)
Q712 2SD638 2SC1788 2SC1317 (VOLTAGE STABILIZER)
D710 MA3100L
T710 EUL8EF022
X715 ELB5A043
X717 ELB5A047
D771 MA151WK
Q773 2SK198 (VL: ON)
Q772 2SK198 (VH: ON)
X716 EFCA40R40M1 (40.4MHz TRAP)
P7001
GND
5.5MHz
5.74MHz
P7002
IC7651 AN5421
MUTING PACK C.B.A. (VEP07364A)
NOISE GATE
SYNC SEP
H-OSC
H-AFC
FILTER
VOLTAGE COMP.
OUT-PUT
TIMER MUTING FREQ. ADJ.
VR7660 2KB
SYNC
GND
REG 12.3V
VIDEO IN
GND
GND
Q715 2SD601 (VOLTAGE STABILIZER)
D712 MA28WA
Q713 2SD1328(S,T) (INV)
TUNER/ARU PACK C.B.A. (VEP07358K)
IC701 M51366SP
FREQ. RESPONCE ADJ
VR741 10KB
BNC
EQ
RF AGC
IF AGC
1ST IF AMP
2ND IF AMP
SIF DET
LIM
LOCK DET
VIDEO DET
AFT
APC DET
-45°
+45°
VCO
FM DET
Q710 2SC1047 2SC2377 (RF AMP)
X710 EFCH38MSP1
Q711 2SC2404(C,D) (AMP)
X714 ELB5A016
EFCS5R5MS5B (5.5MHz TRAP)
EFCS5R74MS5B (5.74MHz TRAP)
X711 EFCS5R5MW5 (5.5MHz TRAP)
T704 EIV5EC006A
T703 EIV5EC013A
AFC DET
VCO ADJ
TP703
TP704
TP706
TP707
TP709
QR713 UN2211 (INV)
Q771 2SD601
QR702 UN2213 (P.B. Ⓗ ON)
VIF/SIF PA
IC752 AN5215
IC751 AN5215
SIF LIMITER AMP
FM DET
FM DET.(L)
FM DET.(R)
T753 EIS5EC007A
T752 EIS5EC005A
QR715 UN2214 (SYNC Ⓛ: OFF)
QR714 UN2214 (SYNC Ⓛ: OFF)
Q714 2SD601 or 2SD602 (AMP)
IC7301 TDA3803A
AM DEMODU-LATOR
CONTROL VOLTAGE SENSOR
PILOT AMPLIFIER
DEMATRIX
STEREO ADJ.
PILOT FREQ. ADJ.
Q7301 2SD601(S,T) (AMP)
T7301 EIR7QG001B
TP730

Für Werte ohne Bezeichnung F (μF) oder Ω einsetzen.
Read F (μF) or Ω respectively unless otherwise noted.

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Schaltbild TV-Demodulatorteil (ECV)
TV Demodulator Unit Schematic Diagram (ECV)


IC701 M51366SP
Q710 2SC1047 2SC2377 (RF AMP)
Q711 2SC2404(C,D) (AMP)
QR713 UN2211 (INV)
Q771 2SD601
QR702 UN2213 (P.B. Ⓗ:ON)
VIF/SIF PACK C.B.A. (VEP07357A)
TV DEMODULATOR INTERFACE C.B.A. (VEP00H51P)
P701 (TO CH SELECT)
P702 (TO CH SELECT)
P703 (TO CH SELECT)
P7001
P7002
IC752 AN5215
IC751 AN5215
SIF LIMITER AMP
FM DET
QR715 UN2214 (SYNC Ⓛ:OFF)
QR714 UN2214 (SYNC Ⓛ:OFF)
Q714 2SD601 or 2SD602 (AMP)
Q7301 2SD601(S,T) (AMP)
IC7301 TDA3803A
DEMATRIX
A.F. OUTPUT SELECTOR
CONTROL LOGIC
AM DEMODULATOR
CONTROL VOLTAGE SENSOR
PILOT AMPLIFIER
IDENTIFICATION
SUPPLY
LED DRIVER
Q7302 2SD1328(S,T) (MUTING)
Q7303 2SD1328(S,T) (MUTING)
QR7312 UN2211 (STEREO:ON)
DECODER PACK C.B.A. (VEP07359A)

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Gleichspannungen Tol. ± 15% mit Digitalvoltmeter gegen ⊥ gemessen (Betriebsart „Stop“).
DC voltages tol. ± 15% measured with digital voltmeter against ⊥ (Stop mode).

Platinen des TV-Demodulators (ECV)
TV Demodulator Circuit Boards (ECV)

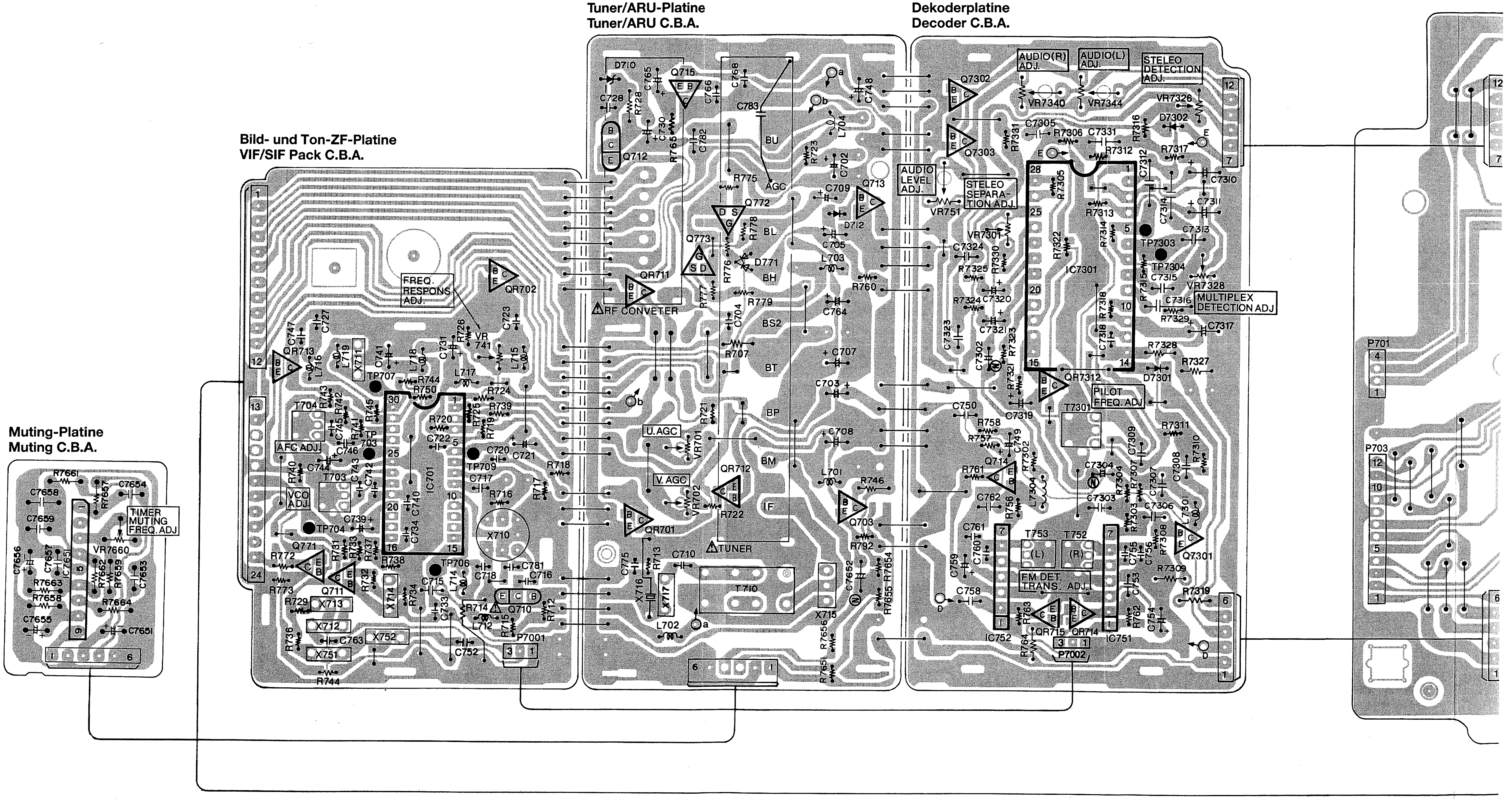
TV-Demodul
TV Demodul

Tuner/ARU-Platine
Tuner/ARU C.B.A.

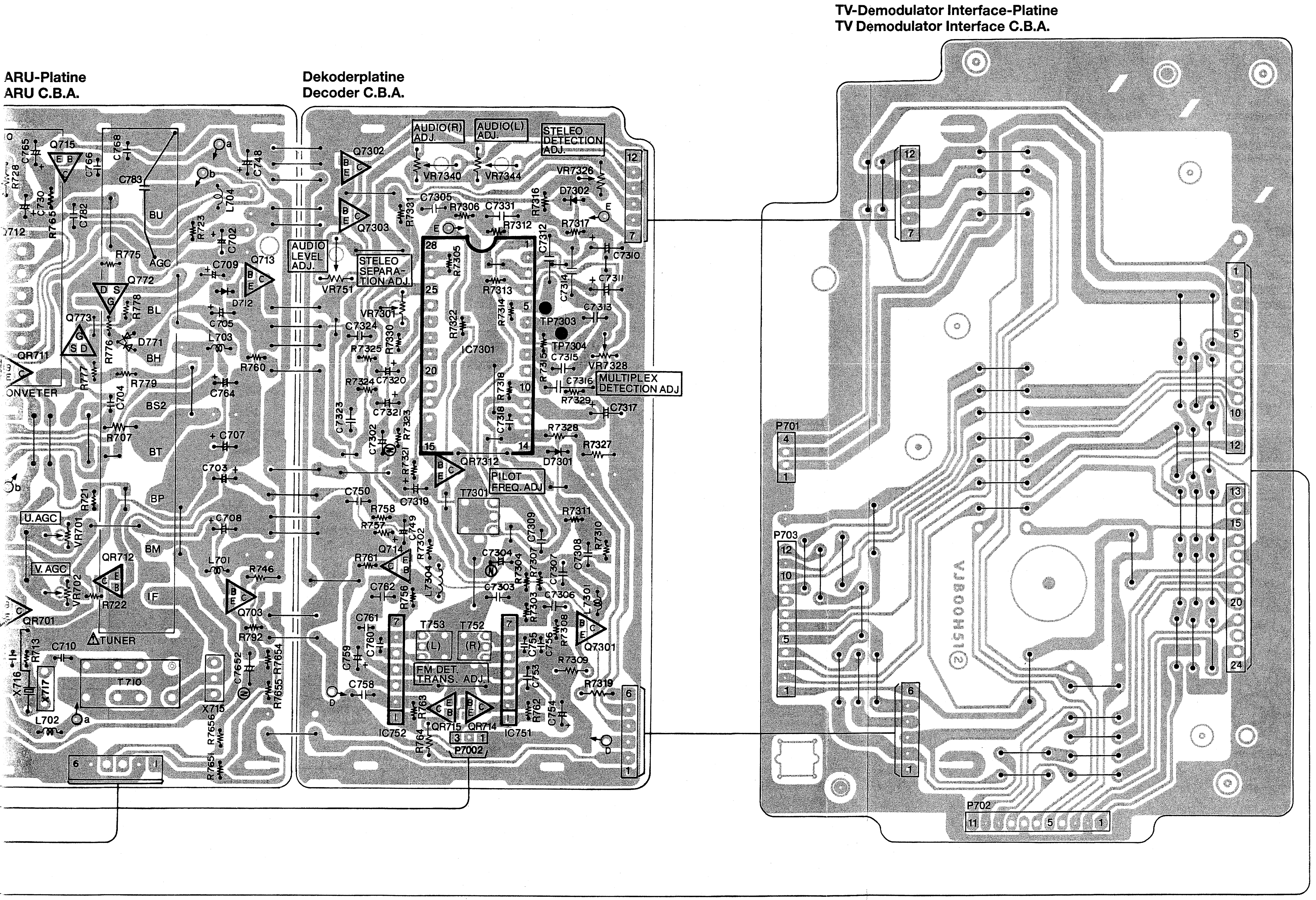
Dekoderplatine
Decoder C.B.A.

Bild- und Ton-ZF-Platine
VIF/SIF Pack C.B.A.

Muting-Platine
Muting C.B.A.

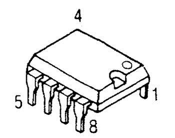

FREQ. RESPONS ADJ.
VR741
QR702
QR713
X711
TP707
R744
R750
IC701
TP703
AFC ADJ.
T704
T703
VCO ADJ.
TP704
TP709
X710
Q771
Q711
TP706
Q710
X714
X713
X712
X751
X752
P7001
R772
R773
R744
R736
D710
Q715
Q712
C783
BU
AGC
Q772
Q773
D771
BL
BH
BS2
BT
BP
BM
IF
QR711
ΔRF CONVETER
U.AGC
VR701
V.AGC
VR702
QR712
QR701
R722
ΔTUNER
T710
X716
X717
L702
X715
Q713
D712
L703
L704
L701
Q703
Q7302
Q7303
AUDIO(R) ADJ.
AUDIO(L) ADJ.
STELEO DETECTION ADJ.
VR7340
VR7344
VR7326
D7302
AUDIO LEVEL ADJ.
STELEO SEPARATION ADJ.
VR751
VR7301
IC7301
TP7303
TP7304
VR7328
MULTIPLEX DETECTION ADJ
QR7312
D7301
PILOT FREQ. ADJ
T7301
Q714
T753 (L)
T752 (R)
FM DET. TRANS. ADJ.
QR715
QR714
IC752
IC751
P7002
Q7301
L7301
L7304
TIMER MUTING FREQ. ADJ
VR7660
IC7651
R7661
C7654
C7658
C7659
C7656
R7663
R7658
R7664
C7655
C7651
P701
P703

Platinen des TV-Demodulators (ECV)
TV Demodulator Circuit Boards (ECV)

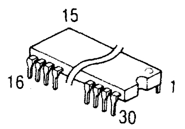

TV-Demodulator Interface-Platine
TV Demodulator Interface C.B.A.
ARU-Platine
ARU C.B.A.
Dekoderplatine
Decoder C.B.A.
Q715
C765
R728
C730
R765
C766
C768
C782
C783
BU
AGC
R775
Q772
R778
Q773
R776
D771
BH
QR711
R777
R779
C704
BS2
R707
BT
BP
R721
U.AGC
VR701
BM
QR712
V.AGC
VR702
R722
IF
QR701
R713
C710
TUNER
T710
X716
X717
L702
X715
R7656
R7651
R7655
R7654
C7652
R792
Q703
R746
L701
C708
C703
C707
C764
R760
L703
C705
D712
C709
Q713
C702
R723
L704
C748
BL
CONVETER
AUDIO(R) ADJ.
AUDIO(L) ADJ.
STELEO DETECTION ADJ.
Q7302
Q7303
VR7340
VR7344
VR7326
D7302
R7316
R7317
C7305
R7306
C7331
R7312
R7331
AUDIO LEVEL ADJ.
VR751
STELEO SEPARATION ADJ.
R7305
C7312
C7310
C7311
C7314
R7313
VR7301
C7324
R7325
R7330
R7322
R7314
TP7303
TP7304
C7313
IC7301
R7315
C7315
VR7328
R7324
C7320
C7316
MULTIPLEX DETECTION ADJ
R7329
C7317
C7323
C7321
R7323
R7318
C7318
R7328
R7327
C7302
R7321
QR7312
D7301
C7319
PILOT FREQ. ADJ.
T7301
R7311
C750
R758
R757
C749
Q714
R7302
C7309
R7310
C7308
R761
C7304
L7304
R7304
R7307
C7307
C762
R756
C7303
R7303
C7306
L7301
C761
C760
T753
(L)
T752
(R)
C755
C756
R7308
Q7301
C759
FM DET. TRANS. ADJ.
C753
R7309
C758
R763
R762
C754
R7319
IC752
QR715
QR714
IC751
R764
P7002
P701
P703
P702
VJB0OH512
12
7
6
1
10
13
15
20
24
11
5

Halbleiter-Anschlußpunkte
Semi Conductor Connection Points

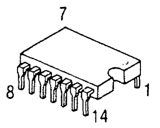
Allgemeine Teile
General Parts



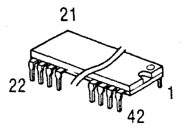
μPC358C LM358P
AN6308 LM393P
μPC4558C LM393PS
AN6658 MN3106
AN6914



M51366SP
AN3294K
AN3321K
AN3494NK



MN3106
MN4066B
MN4013B
μPD4001BC
μPD4069UBC



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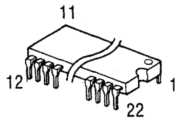
MN158412VYR



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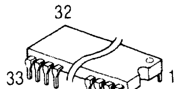
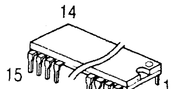
AN6367K



MN15362VBR
MN15283VPY



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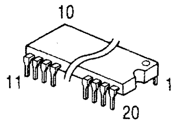
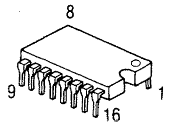
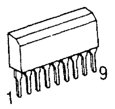
TDA3803A
μPD6162AA601



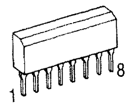
AN3224K
AN3920K
AN3594K



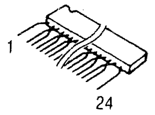
AN5043
MN1226
μPD4052BC
MC14510BCP
TL8705P



TA7348P
μPC1531HA



MN5201L
μPC1490HA



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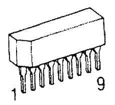
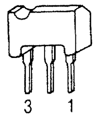
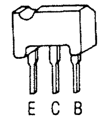
BA7752LS



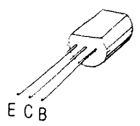
AN5421
AN6913



MN1280R
MN1280T



2SA1128	2SC3314
2SA1254	2SC2377
2SB641	2SD636
2SB642	2SD637
2SB643	2SD638
2SB788	2SD1330
2SB790	2SD958
2SC1318	2SD973
2SC2206	



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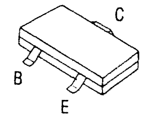
2SD655



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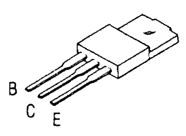
2SB709	2SD1306
2SC2295	2SD1328
2SC2404	



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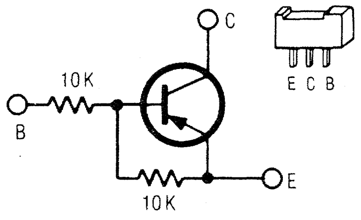
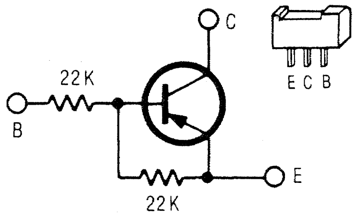
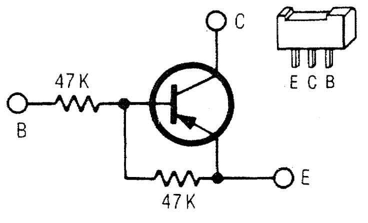
2SD1783


C
10K
B
10K
E
E C B

DTA114EA


C
22K
B
22K
E
E C B

DTA124EA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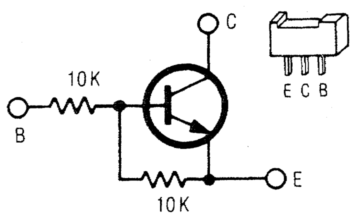
B
47K
E
E C B

DTA144EA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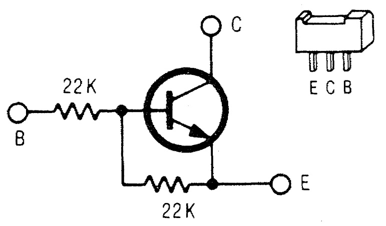
10K
B
10K
E
E C B

DTC114EA


C
22K
B
22K
E
E C B

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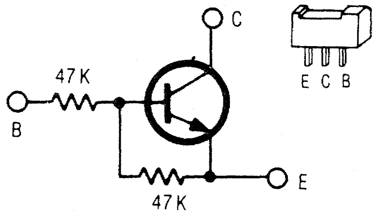
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B
47K
E
E C B

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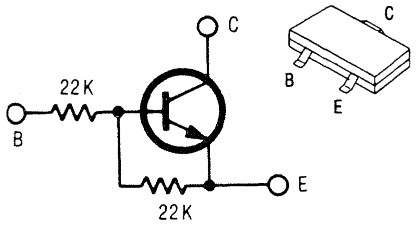
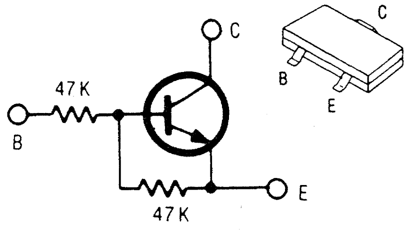
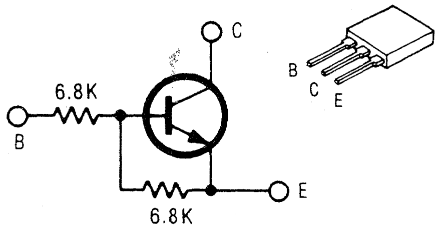

C
22K
B
22K
E
C
B
E

UN2212

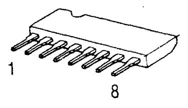

C
47K
B
47K
E
C
B
E

UN2213

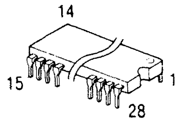

C
6.8K
B
6.8K
E
B
C
E

2SD1676

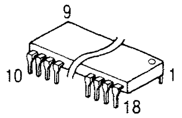
Servoteil
Servo Section



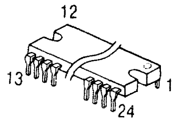
BA6305



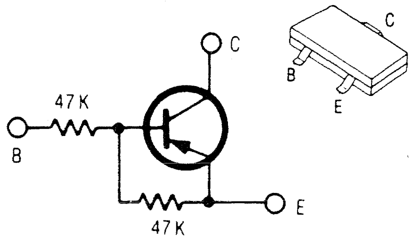
MN15312VPL



AN3814K

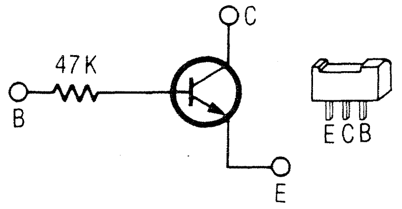


BA6432S


C
47K
B
47K
E
C
B
E

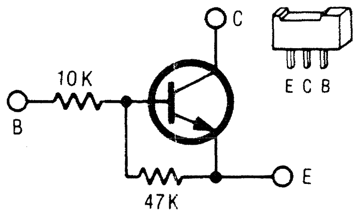
DTA144EK

System-Steuerungsteil
System Control Section



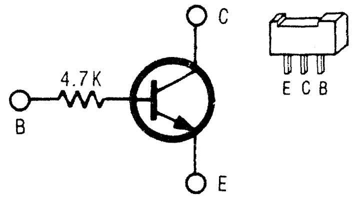
UN1210

Luminanz- und Farbteil
Luminance & Chrominance Section


C
10K
B
47K
E
E C B

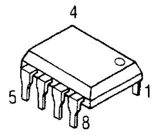
DTC114YA

Tonteil
Audio Section

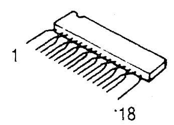


DTC143TA

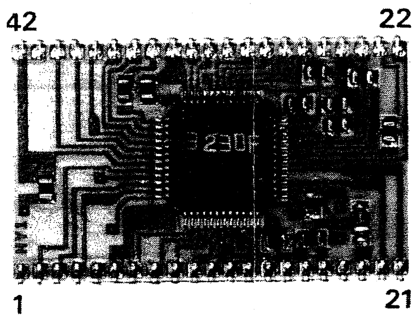
Luminanz- und Farbteil
Luminance and Chrominance Pack



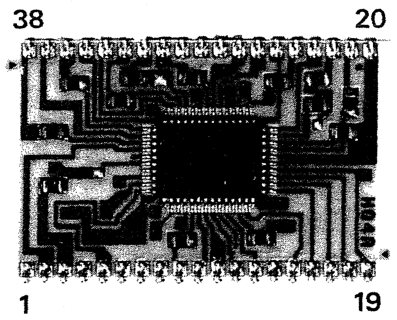
MSM6965-3RS



BA7025L

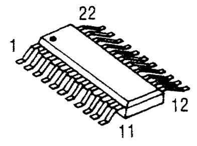


VEFH03D

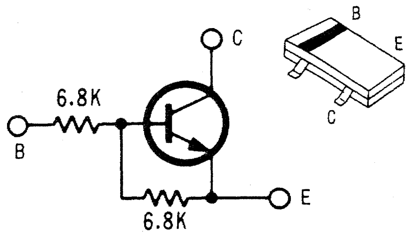


VEFH04A

Kopfverstärkerteil
Head Amp Pack

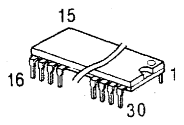


AN3311S

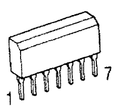

C
6.8K
B
6.8K
E
B
E
C

2SD1777CI

FM-Tonteil
FM Audio Pack

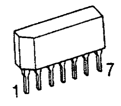


BA7711S

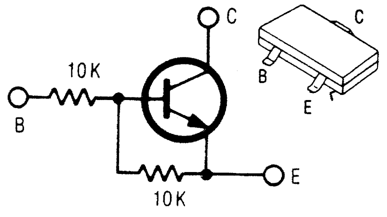


TA7302P

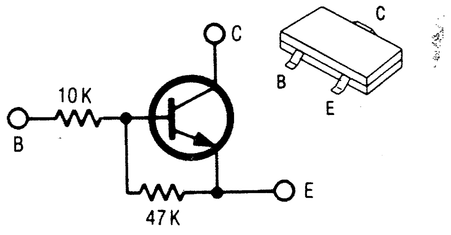
TV-Demodulator
TV Demodulator



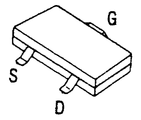
AN5215


C
10K
B
E
10K
C
B
E

UN2211

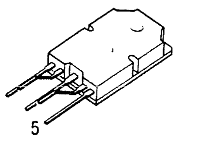

C
10K
B
E
47K
C
B
E

UN2214

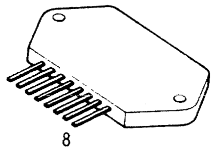


2SK198

Netzteil
Power Section

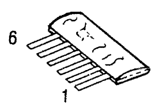


STR16006



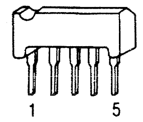
STK5339

Bedienteil
Operation Section

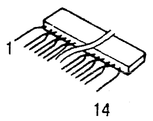


VCR0172

Eingangs/Ausgangsteil
Input/Output Pack

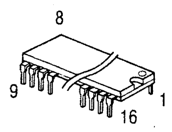


BA7004

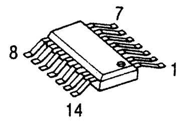


M51132L

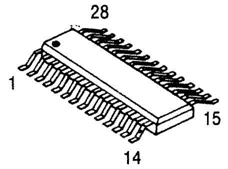
Luminanz- und Farbteil (S-VHS)
Luminance and Chrominance Section (S-VHS)



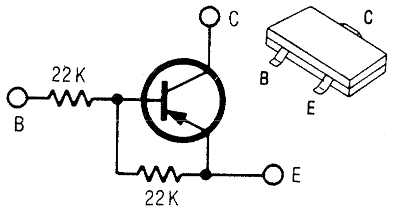
M52055P
MN1550VNT



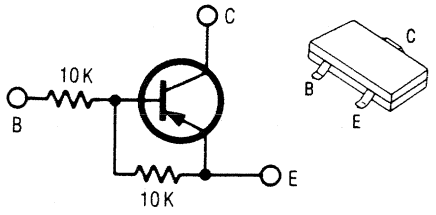
µPD74HC00G



BU3781F

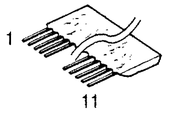

C
22K
B
E
22K
C
B
E

UN2112

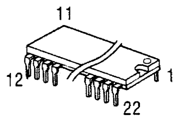

C
10K
B
E
10K
C
B
E

UN2111

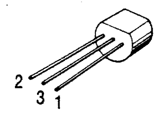
S-VHS-Teil
S-VHS Section



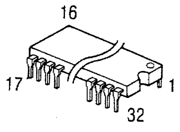
VCR0185A



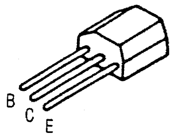
µPC1517CA



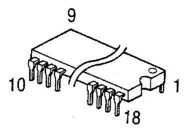
AN78L09



M51647SP

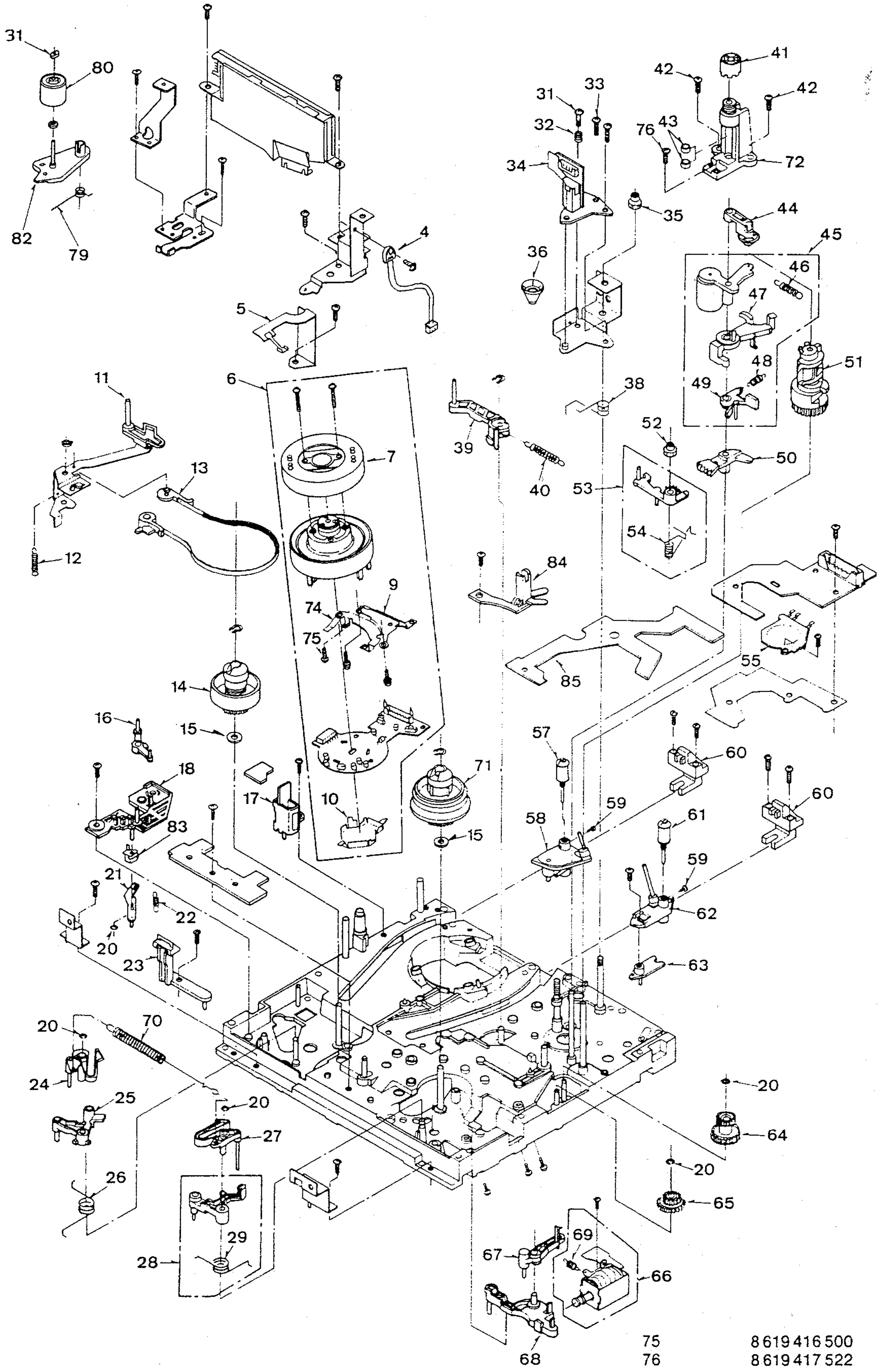


2SD1676



VC2031DP

Explosionszeichnung (1) Transporteinheit
Exploded View (1) Transport Section


31
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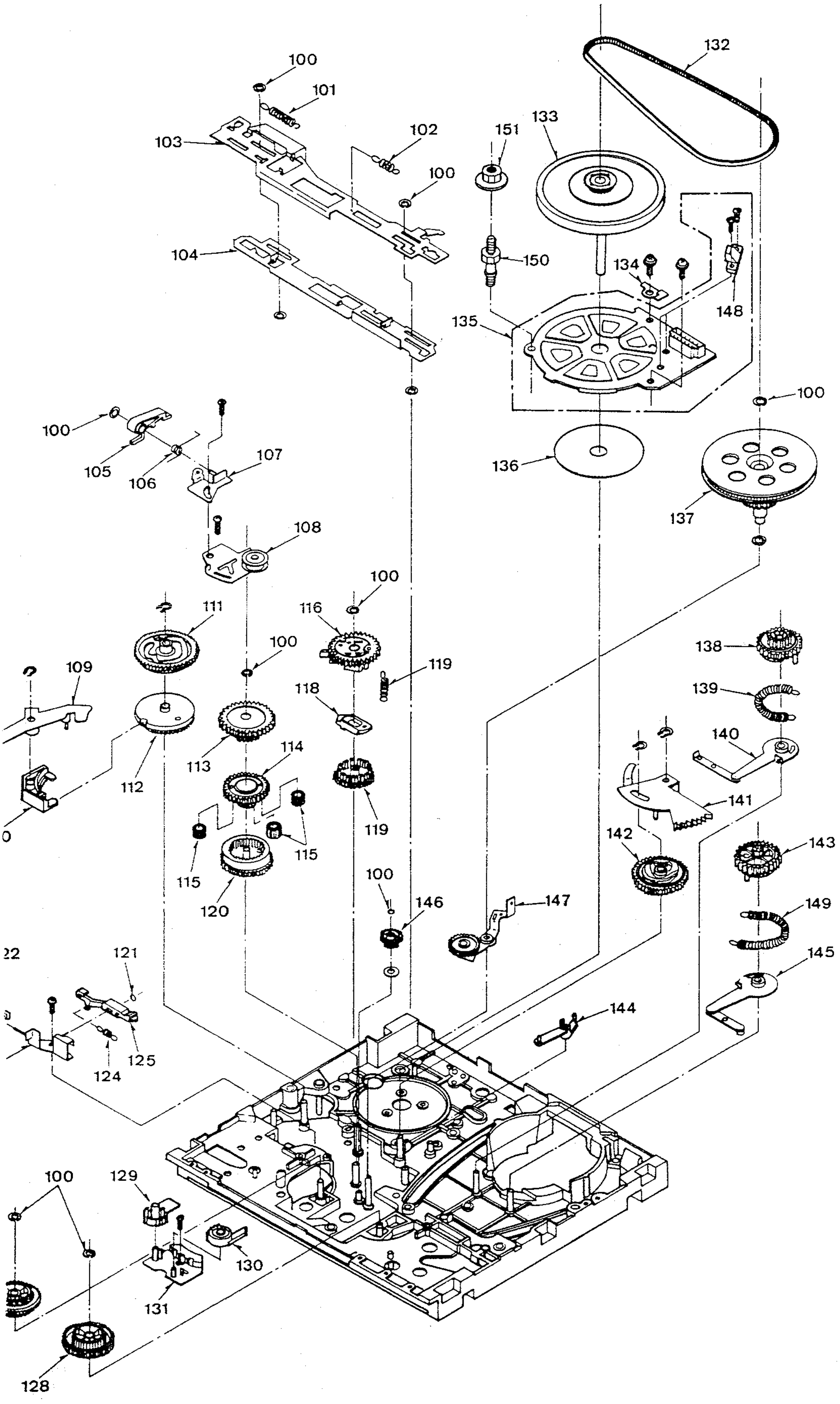
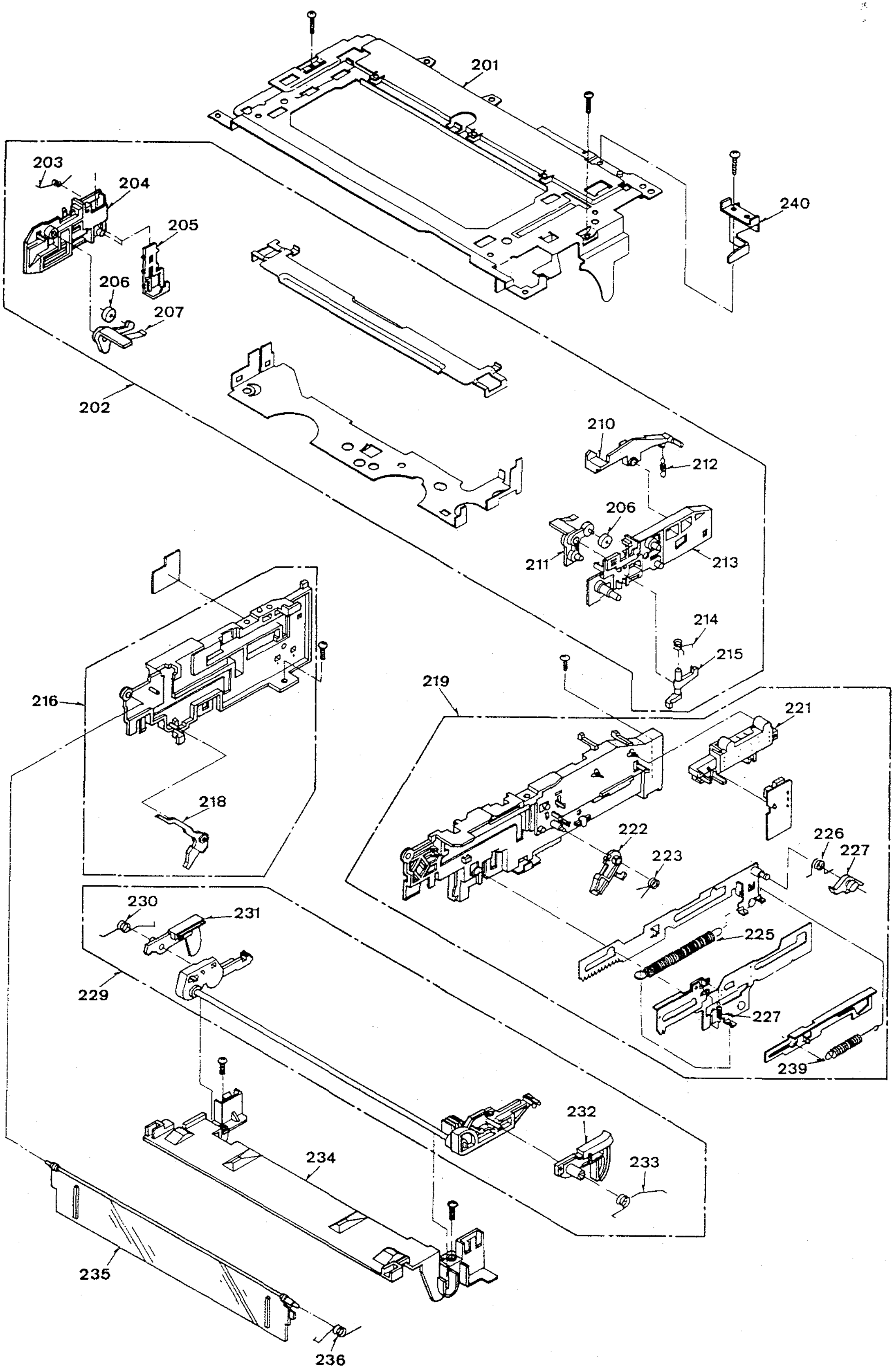
Lfd. Nr. Item no.	Bestell-Nr. Part no.
4	8 619 425 501
5	8 619 416 100
6	8 619 419 300
7	8 619 419 400
9	8 619 416 124
10	8 619 416 802
11	8 619 414 205
12	8 619 414 631
13	8 619 414 206
14	8 619 414 367
15 0,5 mm	8 619 417 411
15 0,3 mm	8 619 417 412
15 0,2 mm	8 619 417 413
16	8 619 414 207
17	8 619 434 602
18	8 619 414 208
20	8 619 414 409
21	8 619 414 209
22	8 619 414 632
23	8 619 424 215
24	8 619 414 210
25	8 619 414 211
26	8 619 414 633
27	8 619 414 212
28	8 619 414 213
29	8 619 416 600
31	8 619 417 520
32	8 619 316 604
33	8 619 312 507
34	8 619 437 606
35	8 619 414 554
36	8 619 414 500
38	8 619 414 634
39	8 619 414 214
40	8 619 414 635
41	8 619 414 555
42	8 619 417 521
43	8 619 414 369
44	8 619 417 235
45	8 619 419 301
46	8 619 414 636
47	8 619 416 102
48	8 619 416 103
49	8 619 416 103
50	8 619 414 359
51	8 619 416 307
52	8 619 311 506
53	8 619 414 216
54	8 619 416 601
55	8 619 424 216
57	8 619 416 308
58	8 619 414 217
59	8 619 312 502
60	8 619 414 218
61	8 619 419 302
62	8 619 419 303
63	8 619 414 220
64	8 619 417 363
65	8 619 414 344
66	8 619 429 501
67	8 619 414 221
68	8 619 419 100
69	8 619 414 638
70	8 619 414 639
71	8 619 414 368
72	8 619 414 223
74	8 619 416 801
75	8 619 416 500
76	8 619 417 522
79	8 619 419 600
80	8 619 419 304
81	8 619 417 183
82	8 619 419 101
83	8 619 419 601
84	8 619 414 204
85	8 619 494 712

xplosionszeichnung (2) Laufwerkteile
xploded View (2) Mechanism Section


100
101
103
102
100
151
133
132
104
150
134
148
135
100
100
105
106
107
136
137
108
100
111
116
100
119
109
118
138
139
113
114
112
140
141
0
119
115
115
142
143
115
120
100
146
147
149
22
121
145
144
125
124
100
129
130
131
128

Lfd. Nr. Item no.	Bestell-Nr. Part no.
100	8 619 414 409
101	8 619 414 640
102	8 619 414 641
103	8 619 414 224
104	8 619 414 225
105	8 619 414 226
106	8 619 414 642
107	8 619 414 227
108	8 619 414 371
109	8 619 416 126
110	8 619 414 229
111	8 619 414 355
112	8 619 414 352
113	8 619 414 357
114	8 619 416 309
115	8 619 414 354
116	8 619 414 372
117	8 619 414 643
118	8 619 414 358
119	8 619 414 346
120	8 619 414 351
121	8 619 411 402
122	8 619 414 230
123	8 619 414 231
124	8 619 414 644
125	8 619 414 232
127	8 619 418 308
128	8 619 417 356
129	8 619 414 233
130	8 619 414 234
131	8 619 414 235
132	8 619 417 910
133	8 619 414 366
134	8 619 416 104
135	8 619 414 362
136	8 619 416 105
137	8 619 417 357
138	8 619 416 310
139	8 619 414 645
140	8 619 414 236
141	8 619 417 358
142	8 619 416 312
143	8 619 416 313
144	8 619 414 237
145	8 619 414 238
146	8 619 414 347
147	8 619 414 239
148	8 619 434 600
149	8 619 416 613
150	8 619 419 500
151	8 619 419 501

Explosionszeichnung (3) Kassettenfachteile
Exploded View (3) Cassette Loading Mechanism Section


201
203
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240
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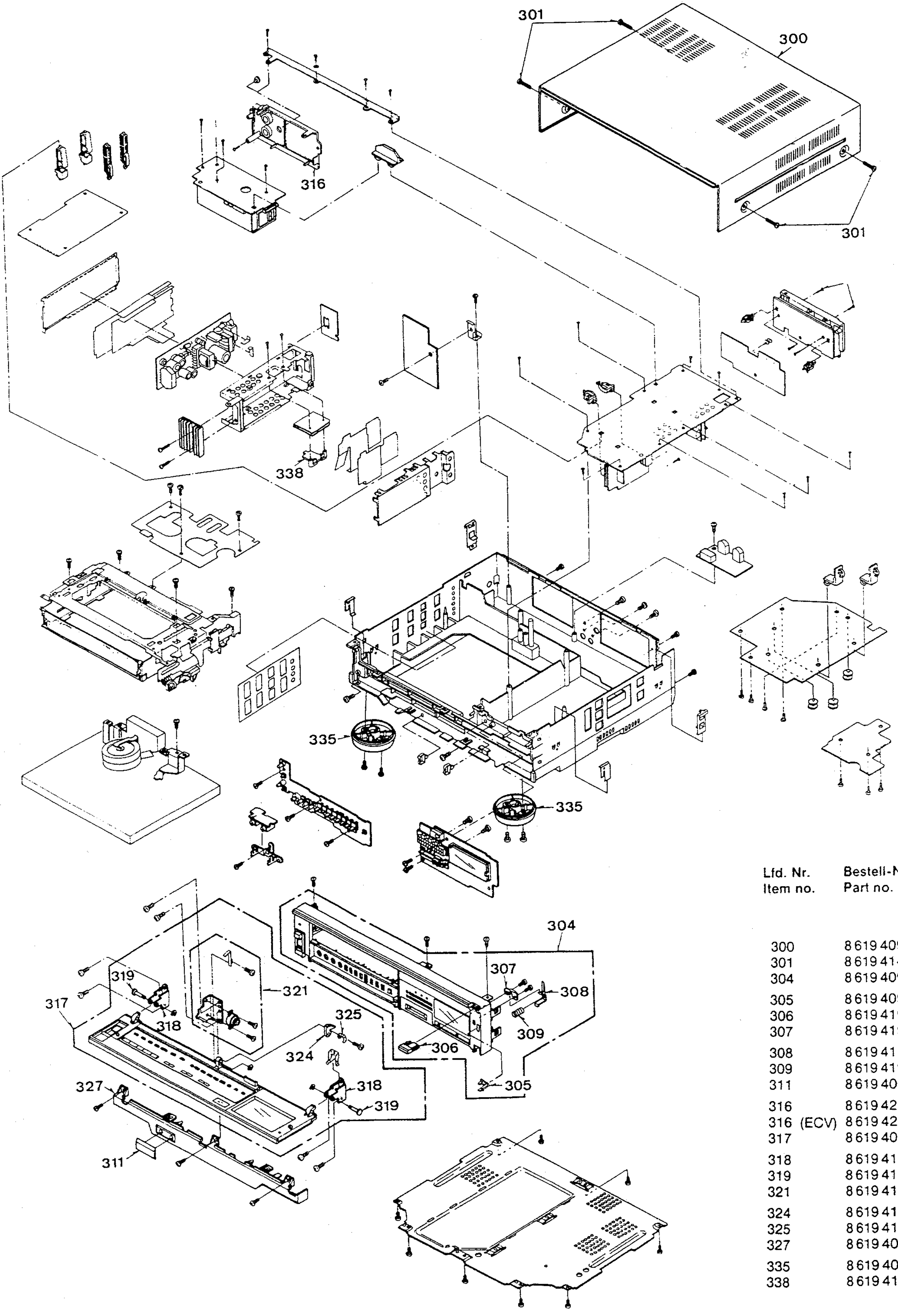
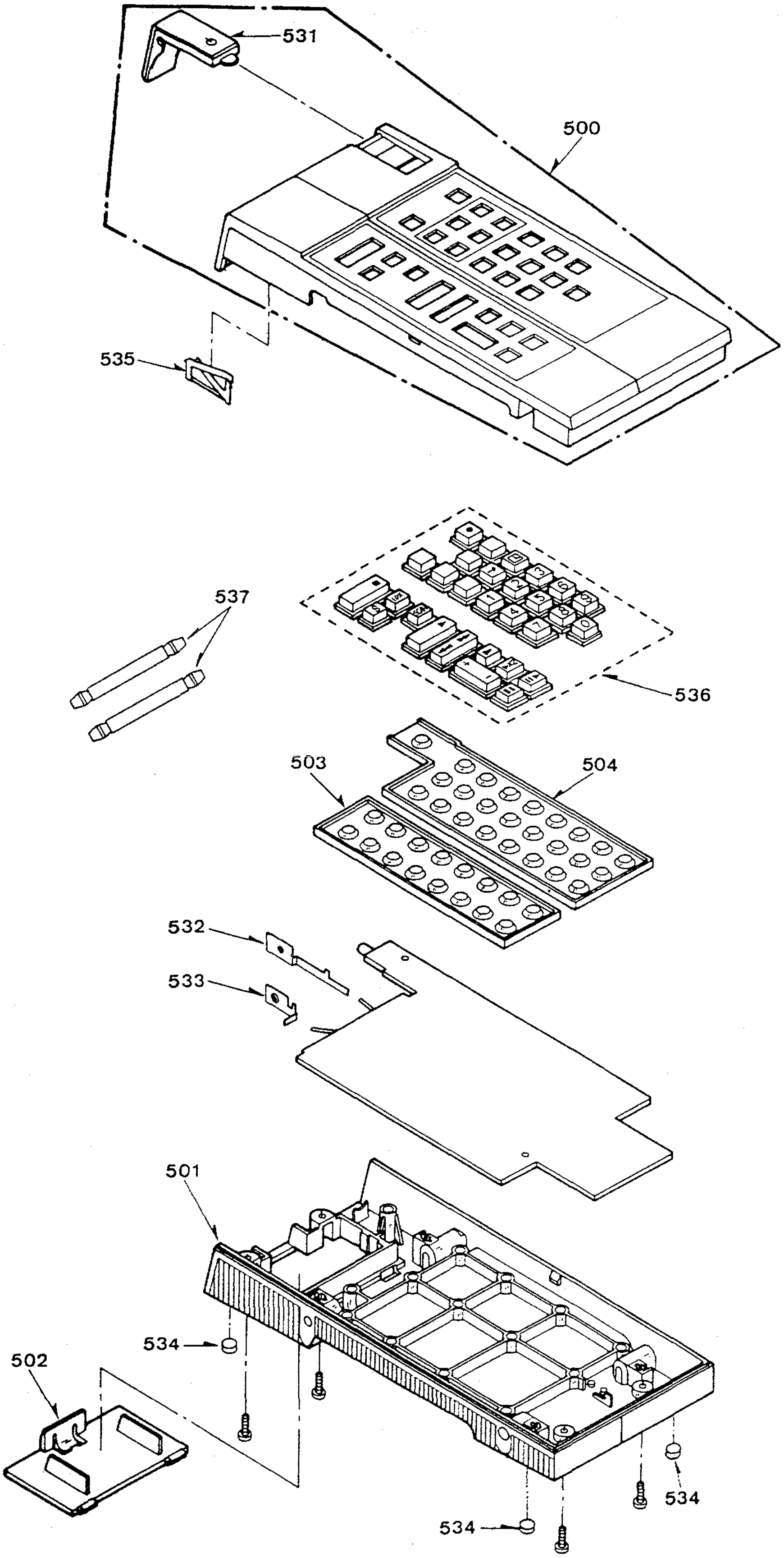
Lfd. Nr. Item no.	Bestell-Nr. Part no.
201	8 619 416 127
202	8 619 414 240
203	8 619 416 602
204	8 619 416 106
205	8 619 416 107
206	8 619 416 108
207	8 619 416 109
210	8 619 416 110
211	8 619 416 111
212	8 619 416 603
213	8 619 416 112
214	8 619 416 604
215	8 619 416 113
216	8 619 416 114
218	8 619 414 242
219	8 619 409 000
221	8 619 424 217
222	8 619 416 605
223	8 619 416 605
225	8 619 417 633
226	8 619 417 634
227	8 619 416 116
229	8 619 419 305
230	8 619 417 635
231	8 619 417 222
232	8 619 417 223
233	8 619 417 636
234	8 619 414 244
235	8 619 404 065
236	8 619 316 623
237	8 619 417 637
239	8 619 417 638
240	8 619 416 128

xplosionszeichnung (4) Gehäuseteile
xploded View (4) Casing Parts Section


301
300
301
316
338
335
335
304
307
308
309
306
305
319
317
321
318
325
324
327
318
319
311

Lfd. Nr. Item no.	Bestell-Nr. Part no.
300	8 619 409 001
301	8 619 414 556
304	8 619 409 002
305	8 619 409 900
306	8 619 419 000
307	8 619 419 102
308	8 619 419 103
309	8 619 419 602
311	8 619 409 003
316	8 619 424 615
316 (ECV)	8 619 425 607
317	8 619 409 004
318	8 619 419 104
319	8 619 419 306
321	8 619 419 105
324	8 619 419 308
325	8 619 419 604
327	8 619 409 005
335	8 619 409 006
338	8 619 419 106

Explosionszeichnung (5) Infrarot Fernbedienung
Exploded View (5) IR Remote Control


531
500
535
537
536
503
504
532
533
501
534
502
534
534

Lfd. Nr. Item no.	Bestell-Nr. Part no.
500	8 619 409 007
501	8 619 404 010
502	8 619 404 008
503	8 619 411 900
504	8 619 411 901
531	8 619 404 004
532	8 619 421 202
533	8 619 421 201
534	8 619 408 004
535	8 619 421 200
536	8 627 105 289
537	8 663 110 026

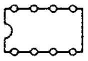
Position Position	Bezeichnung Designation	Bestell-Nr. Part no.

Wichtige mechanische Bauteile
Important mechanical Parts

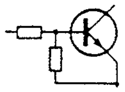
1	Kopftrommel DD cylinder unit	8 619 419 300
2	Kopfscheibe Upper cylinder unit	8 619 419 400
3	Capstan Rotor Capstan rotor unit	8 619 414 366
4	Capstan Stator Capstan stator unit	8 619 414 362
5	Folienleiterbahn (P7404 - P 7506) Flexible C. B. 13pol	8 619 499 700
6	Folienleiterbahn (P 4501 - P 4003) Flexible C. B. 28pol	8 619 494 711
7	Tuner	8 619 436 402
8	HF-Konverter (EGC) RF converter (EGC)	8 619 434 403
9	HF-Konverter (ECV) RF converter (ECV)	8 619 434 402
10	Netzeingangsbuchse AC Jack	8 619 427 649
11	Netzkabel Power cable	8 619 496 701
12	Antennenkabel RF cable	8 619 496 700
13	NF-Kabel Audio cable	8 619 396 700
14	S-VHS-Verbindungskabel S-VHS cable	8 619 499 701
15	IR-Fernbedienung IR remote control unit	8 619 499 800
16	Rastbolzen Locking bolt	8 663 110 026
17	Strichcode-Lesestift Automatic code timer	8 619 427 504
18	Tasche für Lesestift Case for code timer	8 619 406 005
19	Programmiertabelle programming sheet	8 619 419 109

Fernbedienungs-Platine
IR Remote Control C. B. A.

D 1	SE 303 AY	8 945 405 632
D 2-5	MA 154 WK	8 945 405 253



IC 1	MN 6013 P	8 945 901 939



QR 1	UN 1231	8 940 890 163

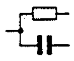
X 1		8 946 193 049

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.

Hauptplatine
Main C. B. A.

5pol flex. Kabel 5pol flex. cable		8 619 494 710

C 7571	47 mF 5,5 V	8 942 999 006



CR 4002		8 940 890 154

D 0201	MA 153	8 945 405 227
D 0204	MA 153	8 945 405 227
D 0301	MA 4091	8 905 406 163
D 0803	MA 165	8 905 421 098
D 0804	MA 165	8 905 421 098
D 0805	MA 165	8 905 421 098
D 0806	MA 165	8 905 421 098
D 1102	MA 165	8 905 421 098
D 1103	MA 165	8 905 421 098
D 1104	ERA15-10	8 945 405 983
D 1105	MA 165	8 905 421 098
D 1106	MA 4051 H	8 945 405 984
D 2001	MA 165	8 905 421 098
D 2002	MA 165	8 905 421 098
D 2003	MA 165	8 905 421 098
D 2004	MA 165	8 905 421 098
D 2007	MA 165	8 905 421 098
D 2008	MA 165	8 905 421 098
D 2009	MA 165	8 905 421 098
D 2801	MA 165	8 905 421 098
D 2802	MA 165	8 905 421 098
D 2803	MA 165	8 905 421 098
D 2804	MA 165	8 905 421 098
D 3001	MA 165	8 905 421 098
D 3002	MA 165	8 905 421 098
D 3003	MA 165	8 905 421 098
D 3004	MA 165	8 905 421 098
D 3005	MA 165	8 905 421 098
D 3006	MA 165	8 905 421 098
D 3007	MA 165	8 905 421 098
D 3008	MA 165	8 905 421 098
D 3601	MA 165	8 905 421 098
D 3602	MA 165	8 905 421 098
D 3901	MA 165	8 905 421 098
D 3951	MA 165	8 905 421 098
D 4003	MA 165	8 905 421 098
D 4004	MA 165	8 905 421 098
D 4005	MA 165	8 905 421 098
D 4006	MA 165	8 905 421 098
D 4007	MA 165	8 905 421 098
D 4202	MA 165	8 905 421 098
D 4951	RD 6.2 EB/RD 6.2 E 13	8 905 421 110
D 4952	MA 165	8 905 421 098
D 4953	MA 165	8 905 421 098
D 4954	MA 165	8 905 421 098
D 4955	MA 165	8 905 421 098
D 4956	MA 165	8 905 421 098
D 4957	MA 165	8 905 421 098
D 4958	MA 165	8 905 421 098
D 6001	ERA 15-01	8 945 405 527
D 6003	MA 165	8 905 421 098
D 6004	MA 165	8 905 421 098
D 6005	MA 165	8 905 421 098
D 6009	MA 165	8 905 421 098
D 6010	MA 165	8 905 421 098

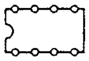
Ersatzteilliste

Spare Parts List

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
D 6011	MA 165		8 905 421 098
D 6012	MA 165		8 905 421 098
D 6017	ERA 15-01		8 945 405 527
D 6018	MA 4056 H		8 945 405 987
D 6019	MA 4140 M		8 945 421 234
D 6020	MA 4110 M		8 945 405 622
D 6021	MA 165		8 905 421 098
D 6022	MA 165		8 905 421 098
D 6023	MA 165		8 905 421 098
D 6024	MA 165		8 905 421 098
D 6028	MA 165		8 905 421 098
D 6029	MA 165		8 905 421 098
D 6030	MA 4056 L		8 945 405 721
D 6031	MA 165		8 905 421 098
D 6032	MA 165		8 905 421 098
D 6035	11 ES 1		8 945 405 679
D 7550	MA 165		8 905 421 098
D 7558	MA 165		8 905 421 098
D 7559	MA 165		8 905 421 098
D 7560	MA 165		8 905 421 098

DL 0801			8 619 484 301
DL 0802	27,0 µH		8 619 486 301

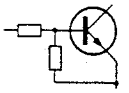
FL 0301			8 619 431 021
FL 0302			8 619 434 045
FL 0303			8 619 436 000
FL 0801			8 619 332 075
FL 0851			8 619 234 014
FL 3901			8 619 431 022
FL 4001			8 619 339 004



IC 0201	UPD 6162 AA 6 01		8 945 902 342
IC 0202	MN 15312 VPL		8 945 902 147
IC 0203	LM 358 P		8 945 901 726
IC 0271	UPD 4069 UBC	(ECV)	8 905 956 945
IC 0301	VEFH 03 D		8 945 902 131
IC 0302	AN 3494 NK		8 945 901 916
IC 0303	MSM 6965-3 RS		8 945 901 917
IC 0801	VEFH 04 A		8 945 901 918
IC 0851	BA 7025 L		8 945 900 368
IC 2001	BA 6432 S		8 945 902 134
IC 2801	BA 6305		8 945 901 919
IC 2802	MN 4013 B		8 945 901 920
IC 2803	AN 6914		8 905 956 758
IC 2804	UPC358C		8 905 956 757
IC 3601	AN 6308		8 945 900 353
IC 3901	TA 7348 P		8 945 901 295
IC 3902	BA 7004		8 905 956 752
IC 3951	UPD 4001 BC		8 945 900 852
IC 4001	BA 7752 LS		8 945 901 514
IC 4901	M 51132 L		8 945 901 921
IC 4951	UPD 4052 BC		8 945 900 836
IC 4952	AN 6558		8 945 900 422
IC 4953			8 905 956 772
IC 4954	M 5201 L		8 945 900 925
IC 6001	MN 15362 VBR		8 945 901 922
IC 6002	LM 393 P		8 945 901 333
IC 6003	MC 14510 BCP		8 945 902 212
IC 6004	MN 1280 R		8 945 901 010
IC 7551	AN 5043		8 945 901 989
IC 7552	AN 6913		8 905 956 983
IC 7553	MN 4066 B		8 945 901 388

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
P 6002			8 619 429 605

Q 0201	2 SD 601		8 925 820 030
Q 0202	2 SD 601		8 925 820 030
Q 0203	2 SB 709		8 925 820 033
Q 0204	2 SB 709		8 925 820 033
Q 0205	2 SB 709		8 925 820 033
Q 0206	2 SB 709		8 925 820 033
Q 0207	2 SC 3314		8 945 705 607
Q 0208	2 SD 601		8 925 820 030
Q 0301	2 SB 709		8 925 820 033
Q 0302	2 SC 2295		8 945 705 490
Q 0303	2 SC 2295		8 945 705 490
Q 0304	2 SD 601		8 925 820 030
Q 0801	2 SD 601		8 925 820 030
Q 0802	2 SC 2295		8 945 705 490
Q 0804	2 SB 709		8 925 820 033
Q 1102	2 SD 655		8 905 706 023
Q 1103	2 SD 655		8 905 706 023
Q 2001	2 SB 641		8 905 705 540
Q 2002	2 SD 636		8 905 705 604
Q 2801	2 SD 636		8 905 705 604
Q 2802	2 SB 641		8 905 705 540
Q 2803	2 SD 636		8 905 705 604
Q 2804	2 SD 636		8 905 705 604
Q 2805	2 SD 636		8 905 705 604
Q 2806	2 SD 636		8 905 705 604
Q 2807	2 SD 636		8 905 705 604
Q 2808	2 SD 636		8 905 705 604
Q 3003	2 SD 655		8 905 706 023
Q 3005	2 SD 636		8 905 705 604
Q 3006	2 SC 2206	(ECV)	8 905 705 485
Q 3050	2 SD 636		8 905 705 604
Q 3901	2 SC 2206		8 905 705 485
Q 3951	2 SB 641		8 905 705 540
Q 4001	2 SD 639		8 905 705 008
Q 4001	2 SC 1318	(ECV)	8 905 705 587
Q 4002	2 SD 637		8 905 705 605
Q 4003	2 SD 637		8 905 705 605
Q 4004	2 SB 642		8 905 705 541
Q 4006	2 SD 636		8 905 705 604
Q 4007	2 SB 643		8 905 705 542
Q 4201	2 SD 655		8 905 706 023
Q 4202	2 SD 655		8 905 706 023
Q 4901	2 SD 1330		8 905 705 507
Q 4951	2 SD 636		8 905 705 604
Q 6007	2 SB 790		8 945 705 401
Q 6008	2 SB 641		8 905 705 540
Q 6009	2 SB 790		8 945 705 401
Q 6009	2 SA 1128	(ECV)	8 945 705 890
Q 6011	2 SB 790		8 945 705 401
Q 6011	2 SA 1128	(ECV)	8 945 705 890
Q 6015	2 SD 655		8 905 706 023
Q 6016	2 SD 1783		8 945 705 585
Q 6017	2 SD 893		8 945 705 491
Q 6018	2 SD 973		8 905 705 495
Q 6019	2 SD 638		8 905 705 606
Q 7553	2 SD 636		8 905 705 604



QR 0201	DTA 144 EK		8 945 705 615
QR 0202	DTA 144 EK		8 945 705 615
QR 0203	UN 2212		8 945 705 311
QR 0301	UN 2212		8 945 705 311
QR 0302	UN 2212		8 945 705 311
QR 0303	UN 2212		8 945 705 311

Position	Bezeichnung		Bestell-Nr.
Position	Designation		Part no.
QR 0304	UN 2212		8 945 705 311
QR 0305	UN 2212		8 945 705 311
QR 0306	UN 2212		8 945 705 311
QR 0801	UN 2212		8 945 705 311
QR 0852	UN 1213		8 945 705 386
QR 0853	UN 1213		8 945 705 386
QR 1101	UN 1213		8 945 705 386
QR 1102	UN 1211		8 945 705 586
QR 2002	UN 1212		8 945 705 283
QR 2003	UN 1112		8 945 705 587
QR 2004	UN 1112		8 945 705 587
QR 2006	UN 1213		8 945 705 386
QR 2007	UN 1213		8 945 705 386
QR 2801	DTC 144 EA		8 945 705 341
QR 2802	DTC 144 EA		8 945 705 341
QR 2803	DTC 144 EA		8 945 705 341
QR 2804	DTC 114 EA		8 945 705 344
QR 3001	UN 1111		8 945 705 402
QR 3002	UN 1212		8 945 705 283
QR 3003	UN 1113		8 945 705 588
QR 3004	UN 1214		8 945 705 432
QR 3006	UN 1213		8 945 705 386
QR 3007	UN 1211		8 945 705 586
QR 3008	2 SD 1676		8 945 705 406
QR 3601	UN 1212		8 945 705 283
QR 3602	UN 1212		8 945 705 283
QR 3603	UN 1212		8 945 705 283
QR 3604	UN 1212		8 945 705 283
QR 3605	UN 1212		8 945 705 283
QR 4002	UN 1113		8 945 705 588
QR 4004	UN 1213		8 945 705 386
QR 4202	2 SD 1676		8 945 705 406
QR 4203	2 SD 1676		8 945 705 406
QR 4204	2 SD 1676		8 945 705 406
QR 6001	UN 1212		8 945 705 283
QR 6004	UN 1213		8 945 705 386
QR 6005	UN 1213		8 945 705 386
QR 6006	UN 1111		8 945 705 402
QR 6008	UN 1111		8 945 705 402
QR 6010	UN 1111		8 945 705 402
QR 6011	UN 1212		8 945 705 283
QR 6012	UN 1113		8 945 705 588
QR 6013	UN 1213		8 945 705 386
QR 6014	UN 1213		8 945 705 386
QR 6015	UN 1212		8 945 705 283
QR 6016	UN 1111		8 945 705 402
QR 6199	UN 1210		8 945 705 616
QR 7556	UN 1213		8 945 705 386
QR 7557	UN 1213		8 945 705 386
QR 7558	UN 1213		8 945 705 386
QR 7559	UN 1213		8 945 705 386
R 6006	22 Ω	250,0 mW	8 901 027 005
R 6075	18 Ω	2,0 W	8 940 599 264
R 7556	1,5 kΩ	1,0 W	8 940 599 365
S 3901	TEST/AUTO/COLOUR		8 619 424 219
S 3903	DBS		8 619 424 220
T 0851	7,0 μH		8 619 331 016
T 4001			8 619 434 201

Position	Bezeichnung	Bestell-Nr.
Position	Designation	Part no.
VR 0301	20 kΩ	8 941 599 510
VR 0302	10 kΩ	8 901 599 141
VR 0801	500 Ω	8 901 599 142
VR 0802	1 kΩ	8 901 599 134
VR 2001	50 kΩ	8 941 599 393
VR 2002	100 kΩ	8 941 599 394
VR 2006	100 kΩ	8 941 599 394
VR 2009	200 kΩ	8 941 599 268
VR 2010	200 kΩ	8 941 599 268
VR 2011	100 kΩ	8 941 599 394
VR 2013	2 kΩ	8 941 599 366
VR 4001	10 kΩ	8 941 599 219
VR 4002	200 kΩ	8 941 599 225
VR 4004	5 kΩ	8 941 599 226
VR 4005	5 kΩ	8 941 599 226
VR 4510	100 kΩ	8 901 499 106
X 0201		8 906 193 027
X 0301		8 946 193 172
X 0801		8 946 193 116

HiFi-Tonteil-Platine
HiFi-Audio C. B. A.

Position	Designation	Part no.
D 4501	MA 165	8 905 421 098
D 4502	MA 154 WK	8 945 405 253
D 4503	MA 165	8 905 421 098
D 4504	MA 154 WA/MA 154 WQ	8 945 405 292
D 4505	MA 154 WA/MA 154 WQ	8 945 405 292
D 4506	MA 165	8 905 421 098
D 4508	MA 165	8 905 421 098
D 4509	MA 165	8 905 421 098
D 4511	MA 165	8 905 421 098
D 4512	MA 165	8 905 421 098
D 4513	MA 165	8 905 421 098
D 4651	MA 165	8 905 421 098
FL 4501		8 619 434 048
FL 4503		8 619 434 048
FL 4506		8 619 434 005
FL 4651		8 619 434 006
FL 4652		8 619 434 007
FL 4653		8 619 434 004
IC 4501	BA 7721 S	8 945 901 513
IC 4502	BA 7711 S	8 945 901 512
IC 4503	AN3920K	8 945 901 289
IC 4504	BA 7056 LS	8 945 901 287
IC 4651	TA 7302 P	8 945 900 424
IC 4652	TA 7302 P	8 945 900 424
Q 4501	2 SD 638	8 905 705 606
Q 4502	2 SB 641	8 905 705 540
Q 4503	2 SD 636	8 905 705 604

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
Q 4504	2 SD 1330.(R)		8 905 705 507
Q 4505	2 SD 1330.(R)		8 905 705 507
Q 4651	2 SD 636		8 905 705 604
Q 4652	2 SD 636		8 905 705 604
Q 4701	2 SD 636		8 905 705 604
Q 4702	2 SD 636		8 905 705 604
QR 4501	UN 1213		8 945 705 386
QR 4503	UN 1213		8 945 705 386
QR 4507	UN 1212		8 945 705 283
QR 4508	UN 1211		8 945 705 586
QR 4509	UN 1213		8 945 705 386
QR 4510	UN 1112		8 945 705 587
QR 4511	UN 1212		8 945 705 283
QR 4651	UN 1112		8 945 705 587
QR 4652	UN 1212		8 945 705 283
QR 4751	2 SD 1676		8 945 705 406
R 4670	1 kΩ	2 W	8 940 599 485
R 4671	1 kΩ	2 W	8 940 599 485
VR 4501	2 kΩ		8 901 499 102
VR 4502			8 941 599 604
VR 4503			8 941 599 380
VR 4504			8 941 599 604
VR 4505			8 941 599 381
VR 4507			8 941 599 604
VR 4508			8 941 599 604
VR 4509	2 kΩ		8 901 499 102

Kopfhörer-Platine
Head Phone Jack C. B. A.

Position	Bezeichnung / Designation	Bestell-Nr. / Part no.
	Buchsenhalter Jack Holder	8 619 419 107
	Kopfhörer-Buchse Head Phone Jack	8 619 329 605
	Mikrofon-Buchse Microphone Jack	8 619 429 602
IC 6301	VCR 0172	8 945 901 138
J 6302		8 619 429 602

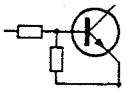
S-VHS-Anschlußplatine
S-VHS Terminal C. B. A.

Position	Bezeichnung / Designation	Bestell-Nr. / Part no.
	S-VHS-Buchse S-VHS Jack	8 619 429 603

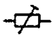
S-VHS-Platine
S-VHS C. B. A.

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
D 3101	MA 165		8 905 421 098
D 3201	MA 165		8 905 421 098
D 3202	MA 165		8 905 421 098
D 3203	MA 165		8 905 421 098
D 3204	MA 165		8 905 421 098
D 3301	MA 165		8 905 421 098
D 3302	MA 165		8 905 421 098
D 3304	MA 165		8 905 421 098
D 3401	MA 4033		8 945 405 587
D 3403	MA 4039 H (M)		8 945 405 722
D 3404	MA 165		8 905 421 098
D 3405	MA 165		8 905 421 098
D 3406	1 SS 99	(ECV)	8 905 406 067
D 8201	MA 165		8 905 421 098
D 8202	MA 165		8 905 421 098
D 8203	MA 165		8 905 421 098
D 8204	MA 165		8 905 421 098
D 8205	MA 165		8 905 421 098
D 8206	MA 165		8 905 421 098
D 8207	MA 165		8 905 421 098
D 8208	MA 165		8 905 421 098
DL 8201			8 619 489 300
DL 8202			8 619 489 301
FL 3101			8 619 439 000
FL 3102			8 619 439 001
FL 3201			8 619 439 002
FL 3401			8 619 439 003
FL 3402			8 619 439 004
FL 3403			8 619 438 003
IC 3101	VCR 0185 A		8 945 902 343
IC 3301	UPC 1517 CA		8 945 900 112
IC 3302	TL 8705 P		8 945 902 344
IC 3303	AN 78 L 09		8 945 902 359
IC 3401	M 51647 SP		8 945 902 345
IC 3402	AN 6306		8 905 956 934
IC 3403	VC 2031 DP		8 945 902 346
IC 3404	AN 3321 K		8 945 902 347
IC 3405	AN 6308		8 945 900 353
IC 3406	AN 6308		8 945 900 353
IC 8201	AN3594K		8 945 900 452
IC 8202	LM 393 P		8 945 901 333
IC 8203	AN 6308		8 945 900 353
Q 3101	2 SD 636		8 905 705 604
Q 3102	2 SD 636		8 905 705 604
Q 3103	2 SC 2206 (B, C)		8 905 705 485
Q 3104	2 SC 2206 (B, C)		8 905 705 485
Q 3105	2 SC 2206 (B, C)		8 905 705 485
Q 3106	2 SB 641		8 905 705 540
Q 3107	2 SC 2206 (B, C)		8 905 705 485
Q 3108	2 SC 2206 (B, C)		8 905 705 485
Q 3110	2 SC 2206 (B, C)		8 905 705 485

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
Q 3111	2 SD 636		8 905 705 604
Q 3112	2 SC 2206 (B, C)		8 905 705 485
Q 3113	2 SC 2206 (B, C)		8 905 705 485
Q 3114	2 SD 636		8 905 705 604
Q 3117	2 SC 2206 (B, C)		8 905 705 485
Q 3118	2 SD 636		8 905 705 604
Q 3119	2 SB 641		8 905 705 540
Q 3201	2 SC 2206 (B, C)		8 905 705 485
Q 3202	2 SC 2206 (B, C)		8 905 705 485
Q 3203	2 SC 2206 (B, C)		8 905 705 485
Q 3204	2 SA 1254-BC		8 945 705 330
Q 3205	2 SA 1254-BC		8 945 705 330
Q 3206	2 SC 2206 (B, C)		8 905 705 485
Q 3207	2 SC 2206 (B, C)		8 905 705 485
Q 3208	2 SC 2206 (B, C)		8 905 705 485
Q 3301	2 SD 636		8 905 705 604
Q 3302	2 SC 2206 (B, C)		8 905 705 485
Q 3303	2 SB 641		8 905 705 540
Q 3304	2 SB 641		8 905 705 540
Q 3305	2 SB 641		8 905 705 540
Q 3401	2 SB 641		8 905 705 540
Q 3402	2 SB 641		8 905 705 540
Q 3403	2 SB 641		8 905 705 540
Q 3404	2 SB 641		8 905 705 540
Q 3405	2 SB 641		8 905 705 540
Q 3406	2 SD 636		8 905 705 604
Q 3407	2 SB 641		8 905 705 540
Q 3408	2 SD 636		8 905 705 604
Q 3409	2 SB 641		8 905 705 540
Q 3410	2 SC 2206 (B, C)		8 905 705 485
Q 3411	2 SA 1254-BC		8 945 705 330
Q 3412	2 SB 641		8 905 705 540
Q 3413	2 SD 636		8 905 705 604
Q 3414	2 SD 636		8 905 705 604
Q 3415	2 SD 1273		8 905 705 623
Q 3416	2 SD 636		8 905 705 604
Q 3417	2 SD 636		8 905 705 604
Q 3418	2 SD 636		8 905 705 604
Q 3419	2 SD 636		8 905 705 604
Q 3420	2 SD 1273		8 905 705 623
Q 3421	2 SD 636		8 905 705 604
Q 3422	2 SB 641		8 905 705 540
Q 8201	2 SC 2206 (B, C)		8 905 705 485
Q 8202	2 SD 636		8 905 705 604
Q 8203	2 SD 636		8 905 705 604



QR 3101	UN 1112		8 945 705 587
QR 3103	UN 1213		8 945 705 386
QR 3106	UN 1213		8 945 705 386
QR 3107	UN 1213		8 945 705 386
QR 3111	2 SD 1676		8 945 705 406
QR 3112	2 SD 1676		8 945 705 406
QR 3113	2 SD 1676		8 945 705 406
QR 3114	2 SD 1676		8 945 705 406
QR 3115	UN 1112		8 945 705 587
QR 3301	UN 1111		8 945 705 402
QR 3302	UN 1213		8 945 705 386
QR 3401	UN 1213		8 945 705 386
QR 3402	UN 1213		8 945 705 386
QR 3403	UN 1213		8 945 705 386
QR 3403	UN 1112	(ECV)	8 945 705 587
QR 3404	UN 1112		8 945 705 587
QR 3405	UN 1213		8 945 705 386
QR 8201	UN 1213		8 945 705 386
QR 8202	UN 1213		8 945 705 386
QR 8203	UN 1213		8 945 705 386



VR 3101	2 kΩ		8 901 499 102
VR 3102	500 Ω		8 901 499 108
VR 3103	500 Ω		8 901 499 108
VR 3104	2 kΩ		8 901 499 102
VR 3301	5 kΩ		8 941 599 530
VR 3302	1 kΩ		8 901 499 096
VR 3401	10 kΩ		8 941 599 528
VR 3402	5 kΩ		8 941 599 530
VR 3403	5 kΩ		8 941 599 530
VR 3404	50 kΩ		8 901 499 105
VR 3405	2 kΩ		8 901 499 102
VR 3406	50 kΩ		8 901 499 105
VR 8201	1 kΩ		8 901 499 096
VR 8202	1 kΩ		8 901 499 096
VR 8203	5 kΩ		8 941 599 530

X 3301			8 946 193 221

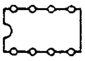
Luminanz- und Farbteil-Platine Luminance and Chrominance Separation C. B. A.

C 8313	0,05 µF	250,0 V	8 943 995 006

D 3701	MA 165		8 905 421 098
D 3703	MA 165		8 905 421 098
D 3801	MA 165		8 905 421 098
D 3802	MA 165		8 905 421 098
D 3803	MA 165		8 905 421 098
D 3901	MA 151 A		8 945 405 225
D 8301	MA 165		8 905 421 098

DL 3701			8 619 488 302

FL 3701			8 619 439 005
FL 3901			8 619 438 003
FL 3902			8 619 439 006
FL 3903			8 619 439 007
FL 3904			8 619 439 007
FL 3904		(ECV)	8 619 436 001
FL 3905			8 619 439 005
FL 3905		(ECV)	8 619 439 016
FL 3906			8 619 439 008
FL 3906		(ECV)	8 619 439 016
FL 3907			8 619 439 007
FL 3907		(ECV)	8 619 436 001
FL 8301			8 619 439 009



IC 3701	AN 3294 K		8 945 902 348
IC 3702	M 52055 P		8 945 902 213
IC 3801	MN 1550 VNT		8 945 902 349
IC 3802	MN 1280 R		8 945 901 010
IC 3803	UPD 74 HC 00G		8 945 902 350
IC 3804	LM 393 PS		8 945 902 351
IC 3901	MN 3106		8 945 902 352
IC 3902	MN 3802 A		8 945 901 668
IC 3903	MN 3802 A		8 945 901 668

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.
IC 8301	M 52055 P	8 945 902 213
IC 8302	AN 6367 K	8 945 901 721
IC 8303	BU 3781 F	8 945 902 353
Q 3701	2 SC 2295	8 945 705 490
Q 3702	2 SD 601	8 925 820 030
Q 3704	2 SA 1022-C	8 945 705 562
Q 3705	2 SC 2295	8 945 705 490
Q 3706	2 SB 709	8 925 820 033
Q 3710	2 SD 601	8 925 820 030
Q 3711	2 SD 601	8 925 820 030
Q 3712	2 SB 709	8 925 820 033
Q 3713	2 SC 2295	8 945 705 490
Q 3715	2 SB 709	8 925 820 033
Q 3716	2 SC 2295	8 945 705 490
Q 3719	2 SD 601	8 925 820 030
Q 3801	2 SB 709	8 925 820 033
Q 3901	2 SB 709	8 925 820 033
Q 3902	2 SC 2295	8 945 705 490
Q 3903	2 SA 1022-C	8 945 705 562
Q 3905	2 SC 2295	8 945 705 490
Q 3906	2 SC 2295	8 945 705 490
Q 3907	2 SD 601	8 925 820 030
Q 3908	2 SD 601	8 925 820 030
Q 8301	2 SC 2295	8 945 705 490
Q 8302	2 SB 709	8 925 820 033
QR 3701	UN 2213	8 945 705 315
QR 3702	UN 2213	8 945 705 315
QR 3703	UN 1213 (ECV)	8 945 705 386
QR 3801	UN 2112	8 945 705 310
QR 3802	UN 2111	8 945 705 316
QR 8301	UN 2212	8 945 705 311
TH 3901	3,3 kΩ	8 901 325 033
TH 3902		8 901 325 035
VR 3701	20 kΩ	8 901 599 133
VR 3702	20 kΩ	8 901 599 133
VR 3703	500 Ω	8 901 599 142
VR 3704	500 Ω	8 901 599 142
VR 3707	200 Ω	8 941 599 601
VR 3708	1 kΩ	8 901 599 134
X 3801		8 946 193 173

Kopfverstärker-Platine
Head Amp C. B. A.

Position	Bezeichnung	Bestell-Nr.
IC 0501	AN3224K	8 945 901 290
IC 0502	AN3311S	8 945 901 267
IC 0551	UPC 1531 HA	8 945 900 834

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.
Q 0501	2 SB 709	8 925 820 033
Q 0551	2 SB 643	8 905 705 542
Q 0552	2 SD 1306	8 945 705 590
QR 0551	2 SD 1777 C 1	8 945 705 591
QR 0552	2 SD 1777 C 1	8 945 705 591
VR 0501	2 kΩ	8 941 599 443
VR 0502	2 kΩ	8 941 599 443

Bedienteil-Platine
Operation C. B. A.

Position	Bezeichnung	Bestell-Nr.
	LED-Abstandshalter LED Spacer	8 619 218 239
	Knopf Input select/Edit/Audio-Meter	8 619 414 000
	Knopf AGC/MPX/Tape Speed/S-VHS/Simul	8 619 411 027
	LED-Halter LED Holder	8 619 411 113
D 6501	LN 81 RCPHL	8 905 405 315
D 6502	LN 38 GCPPSVT	8 945 405 680
D 6503	MA 165	8 905 421 098
D 6504	MA 165	8 905 421 098
D 6505	MA 165	8 905 421 098
D 6506	MA 165	8 905 421 098
D 6507	MA 165	8 905 421 098
QR 6501	UN 1213	8 945 705 386
QR 6502	UN 1113	8 945 705 588
QR 6503	UN 1212	8 945 705 283
SW 6501		8 619 322 210
SW 6502		8 619 322 210
SW 6503		8 619 322 210
SW 6504		8 619 424 200
SW 6506		8 619 421 211
SW 6507		8 619 424 200
SW 6508		8 619 421 211
SW 6510		8 619 424 200
SW 6511		8 619 421 211
SW 6512		8 619 421 211
SW 6513		8 619 421 211
VR 6501	100 kΩ	8 941 599 444
VR 6502	100 kΩ	8 941 599 444
VR 6503	20 kΩ	8 941 599 600
VR 6504	2 kΩ	8 941 599 602

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
VPS-Platine VPS C. B. A.			
D 7851	MA 165		8 905 421 098
IC 7851	MN 158412 VYR		8 945 901 980
IC 7852	MN 1280 T		8 945 901 539
IC 7853	SDA 5642		8 945 902 354
QR 7801	UN 1111		8 945 705 402
QR 7802	UN 1213		8 945 705 386
QR 7851	UN 1211		8 945 705 586
QR 7852	UN 1213		8 945 705 386
X 7851			8 946 193 222
TV-Demodulatorteil TV Demodulator C. B. A.			
Tuner			8 619 436 402
HF-Konverter RF-Converter			8 619 434 403
HF-Konverter RF-Converter	(ECV)		8 619 434 402
D 0710	MA 3100 L		8 945 405 724
D 0712	MA 28 WA		8 945 405 621
D 0771	MA 151 WK		8 945 405 317
D 7301	MA 151 A		8 945 405 225
D 7302	MA 151 A		8 945 405 225
IC 0701	M 51366 SP		8 945 901 286
IC 0751	AN5215		8 905 956 763
IC 0752	AN5215		8 905 956 763
IC 7301	TDA 3803 A		8 945 901 097
IC 7651	AN5421		8 905 956 982
Q 0703	2 SD 601		8 925 820 030
Q 0710	2 SC 2377		8 905 705 486
Q 0711	2 SC 2404		8 925 705 095
Q 0712	2 SD 638		8 905 705 606
Q 0713	2 SD 1328		8 925 820 031
Q 0714	2 SD 601		8 925 820 030
Q 0715	2 SD 601		8 925 820 030
Q 0771	2 SD 601		8 925 820 030
Q 0772	2 SK 198		8 925 705 103
Q 0773	2 SK 198		8 925 705 103
Q 7301	2 SD 601		8 925 820 030
Q 7302	2 SD 1328		8 925 820 031
Q 7303	2 SD 1328		8 925 820 031

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
QR 0701	UN 2214		8 945 705 492
QR 0702	UN 2213		8 945 705 315
QR 0711	UN 2212		8 945 705 311
QR 0712	UN 2212		8 945 705 311
QR 0713	UN 2211		8 945 705 474
QR 0714	UN 2214		8 945 705 492
QR 0715	UN 2214		8 945 705 492
QR 7312	UN 2211		8 945 705 474
R 0714	33 Ω	2 W	8 900 599 205
T 0703			8 619 435 204
T 0704			8 619 439 200
T 0710			8 619 434 203
T 0752			8 619 434 214
T 0753			8 619 434 215
T 7301			8 619 336 204
VR 0701	2 kΩ		8 941 599 222
VR 0702	2 kΩ		8 941 599 222
VR 0741	10 kΩ		8 901 599 141
VR 0751	5 kΩ		8 941 599 364
VR 7301	10 kΩ		8 941 599 528
VR 7326	500 Ω		8 901 499 108
VR 7328	500 Ω		8 901 599 142
VR 7340	10 kΩ		8 941 599 134
VR 7344	10 kΩ		8 941 599 134
VR 7660	2 kΩ		8 901 499 102
X 0710			8 946 193 133
X 0711			8 946 193 134
X 0712			8 946 193 135
X 0713			8 946 193 135
X 0714			8 946 193 026
X 0715			8 946 193 117
X 0716			8 946 193 156
X 0717			8 946 193 138
X 0751			8 946 193 136
X 0752			8 946 193 136
Timer-Platine Timer C. B. A.			
Pegelanzeige-Halter Level Meter Holder			8 619 414 245
Display-Halter Display Holder			8 619 415 131
Knopf (Rec) Knob (Rec)			8 619 419 001
Hebel (Rec) Lever (Rec)			8 619 419 110
Gleitplatte (Rec) Slide Plate (Rec)			8 619 419 111
LED-Abstandshalter LED Spacer			8 619 218 239
LED-Halter LED Holder			8 619 411 113

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.
C 7502	30 pF	8 943 995 042
D 6701	PN 323 B	8 945 405 624
D 7501	11 ES 1 TA	8 945 405 985
D 7502	MA 165	8 905 421 098
D 7503	MA 4075	8 945 421 196
D 7506	MA 165	8 905 421 098
D 7507	MA 165	8 905 421 098
D 7508	MA 165	8 905 421 098
D 7509	MA 165	8 905 421 098
D 7510	MA 165	8 905 421 098
D 7511	MA 165	8 905 421 098
D 7512	MA 165	8 905 421 098
D 7513	MA 165	8 905 421 098
D 7517	LN 81 RCPHL	8 905 405 315
D 7518	LN 81 RCPHL	8 905 405 315
D 7519	LN 31 GCPHLMU	8 905 405 428
D 7520	LN 31 GCPHLMU	8 905 405 428
D 7521	MA 165	8 905 421 098
D 7522	MA 165	8 905 421 098
D 7526	MA 165	8 905 421 098
D 7527	MA 165 (ECV)	8 905 421 098
D 7528	MA 165	8 905 421 098
D 7529	MA 165	8 905 421 098
D 7534	MA 165	8 905 421 098
D 7535	MA 165	8 905 421 098
D 7538	MA 165	8 905 421 098
D 7540	MA 165	8 905 421 098
DP 7501		8 619 489 500
IC 6701	UPC 1490 HA	8 945 901 520
IC 7501	MN 15283 VPY	8 945 902 149
IC 7502	MN 1226	8 945 902 150
IC 7504	MN 1280 P	8 945 901 269
IC 7505	MN 1280 T	8 945 901 539
Q 7501	2 SD 637	8 905 705 605
Q 7502	2 SD 636	8 905 705 604
QR 7502	UN 1213	8 945 705 386
QR 7503	UN 1112	8 945 705 587
QR 7505	UN 1113	8 945 705 588
QR 7506	UN 1213	8 945 705 386
QR 7511	UN 1213	8 945 705 386
VR 6701	100 kΩ	8 941 599 244
VR 7501	50 kΩ	8 941 599 603
X 7501		8 946 193 175
X 7502	VSX 0094	8 906 193 053

Netzteil-Platine
Power Supply C. B. A.

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
Sicherungshalter Fuse Holder			8 619 417 230
D 1001	S 1 WBA 60		8 945 405 623
D 1002	AP 01 C		8 945 405 930
D 1003	MA 178		8 945 405 619
D 1004	MA 178		8 945 405 619
D 1005	MA 178		8 945 405 619
D 1007	MA 185		8 945 405 620
D 1008	MA 185		8 945 405 620
D 1010	ERD 32-01		8 945 405 618
D 1012	MA 4130 L		8 945 421 228
D 1013	MA 185		8 945 405 620
D 1015	ERC 81-004		8 905 406 154
D 1016	AK04V2		8 945 405 625
D 1024	MA 178		8 945 405 619
D 1025	MA 178		8 945 405 619
D 1026	MA 4100 H		8 945 405 726
D 1027	ERD 32-01		8 945 405 618
D 1029	ENB 461 D-05 A		8 945 405 616
D 1030	MA 4082		8 945 421 232
D 1031	AK04V2		8 945 405 625
D 1032	ERA 22-10		8 945 405 725
IC 1001	STK 5339		8 945 901 935
L 1001			8 619 434 052
L 1002	22 µH		8 619 434 053
L 1003	22 µH		8 619 434 053
Q 1001	STR 16006		8 945 705 592
Q 1004	2 SD 638		8 905 705 606
Q 1011	2 SB 643		8 905 705 542
Q 1012	2 SD 958		8 905 705 494
Q 1013	2 SB 788		8 905 705 478
R 1002	2,2 Ω	2 W	8 941 091 029
R 1007	68 kΩ	3 W	8 940 599 260
R 1008	0,39 Ω	2 W	8 940 599 266
R 1009	180 Ω	1 W	8 940 599 333
R 1012	6,8 Ω	0,5 W	8 941 099 011
R 1014	4,7 Ω	250 mW	8 901 027 010
R 1035	0,39 Ω	2 W	8 940 599 266
T 1001			8 619 438 200

Ersatzteilliste

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
Löschkopf-Platine FE Head C. B. A.			
CR 1401	10 nF/33 kΩ		8 940 890 203
Q 1401	2 SD 636		8 905 705 604
Wickelsensor-Platine Reel Sensor C. B. A.			
IC 1501	0N 2170		8 945 901 273
LED-Platine LED C. B. A.			
LED-Halter LED Holder			8 619 414 204
D 1501	GL 450		8 905 406 167
Aufwickel-Tr.-Platine Photo Tr. (T) C. B. A.			
Halter Holder			8 619 316 198
Q 1501	PN 150 NV		8 905 406 077
Abwickel-Tr.-Platine Photo Tr. (S) C. B. A.			
Halter Holder			8 619 316 198
Q 1502	PN 150 NV		8 905 406 077

Spare Parts List

Position Position	Bezeichnung Designation		Bestell-Nr. Part no.
Kopftrommel-Treiberplatine Cylinder Drive C. B. A.			
IC 2901	AN 3814 K		8 945 901 991
R 2901	0,68 Ω	2 W	8 900 599 206
HF-Konverter und Ant.-Anschluß-Platine RF Converter and Ant. Terminal Board			
D 0001	MA 1075		8 905 421 101
D 0002	HSM 276 S		8 945 405 631
D 0003	MA 166		8 945 405 256
D 0005	MA 166		8 945 405 256
IC 0001	LA7051		8 945 901 272
Q 0001	2 SC 2570 A		8 945 705 239
Q 0002	2 SC 3130		8 945 705 400
Kopftrommel-Heizplatine (ECV) Heater C. B. A. (ECV)			
Q 1201	2 SD 1273		8 905 705 623
QR 1202	UN 1221		8 945 705 283

Hinweis:
Handelsübliche Kondensatoren und Widerstände sind in der Ersatzteilliste nicht aufgeführt. Wir bitten Sie, diese Teile im Fachhandel zu beziehen.

Note:
Capacitors and resistors usual in trade are not mentioned in the spare parts list. Kindly buy these parts from the specialized trade.

● BLAUPUNKT
BOSCH Gruppe

Automatic Code Timer
ACT-200
7 618 773

Kundendienstschrift · Service Manual

BLAUPUNKT
ACT-200
ON
OFF
11 10 20:00 20:15
AUTOMATIC CODE TIMER
OFF — ON

Strichcode-Lesestift / Automatic Code Timer

BLAUPUNKT
AUTOMATIC CODE TIMER SYSTEM ACT-200
WÖCHENTLICH EVERYWEEK
PRÜFEN CHECK
VPS
LÖSCHEN CANCEL
19
20
21
22
23

Programmiertabelle
Programming Sheet

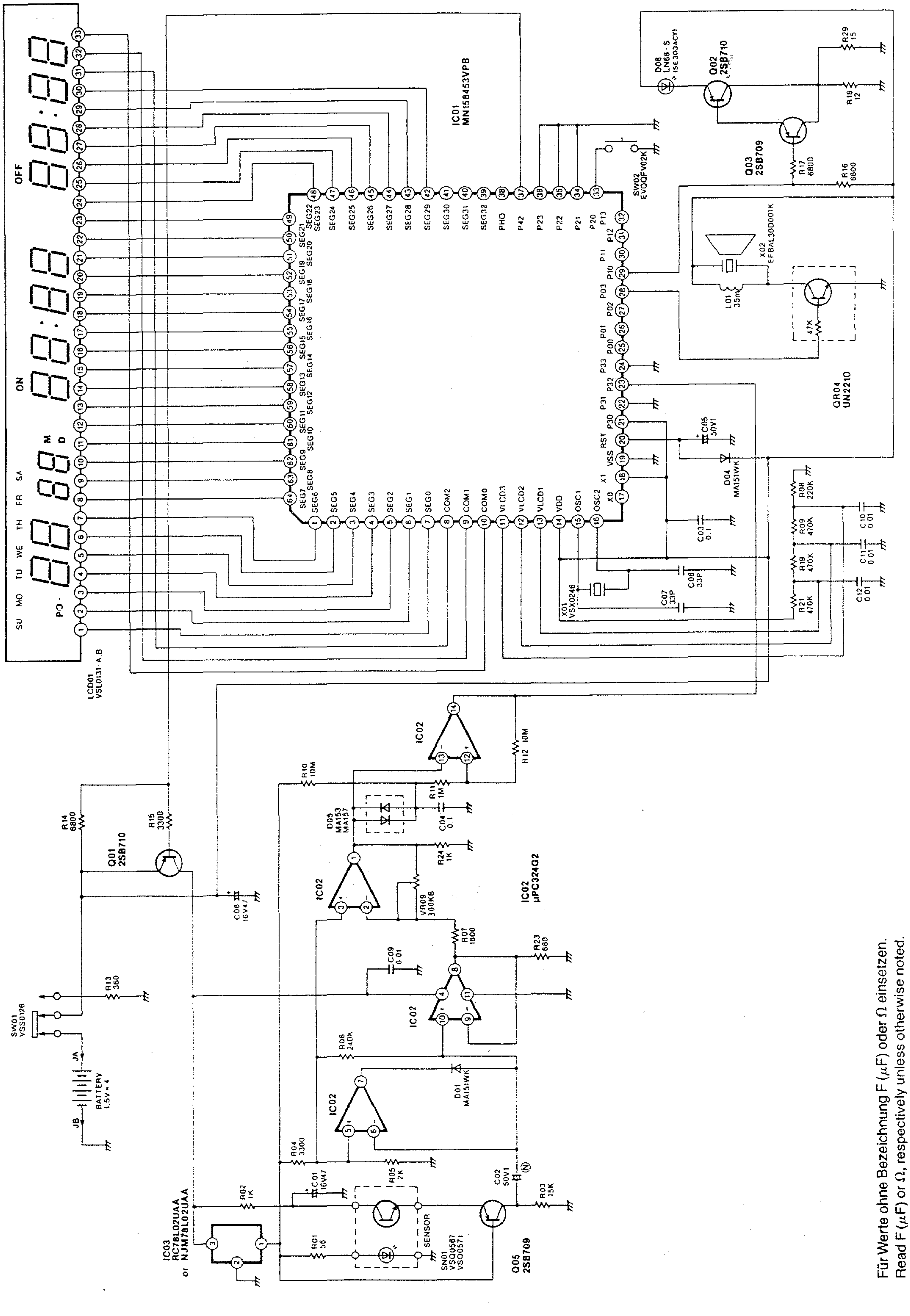
Technische Daten

Spannungsversorgung:	6 V Gleichspannung (4 Mikro-Batterien UM-4 „AAA“/IEC „R 03“)
Masse:	ca. 52 g (ohne Batterien)
Abmessungen:	32 (B) × 23 (H) × 157 (T) mm

Specifications

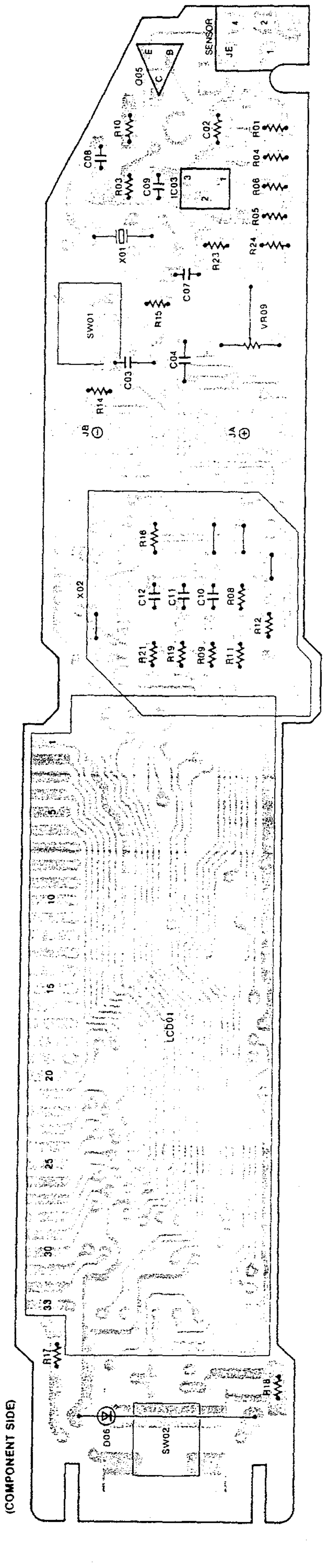
Power:	DC 6 V (4 pcs IEC “R 03” size batteries)
Weight:	approx. 52 g (without batteries)
Dimensions:	32 (W) × 23 (H) × 157 (D) mm

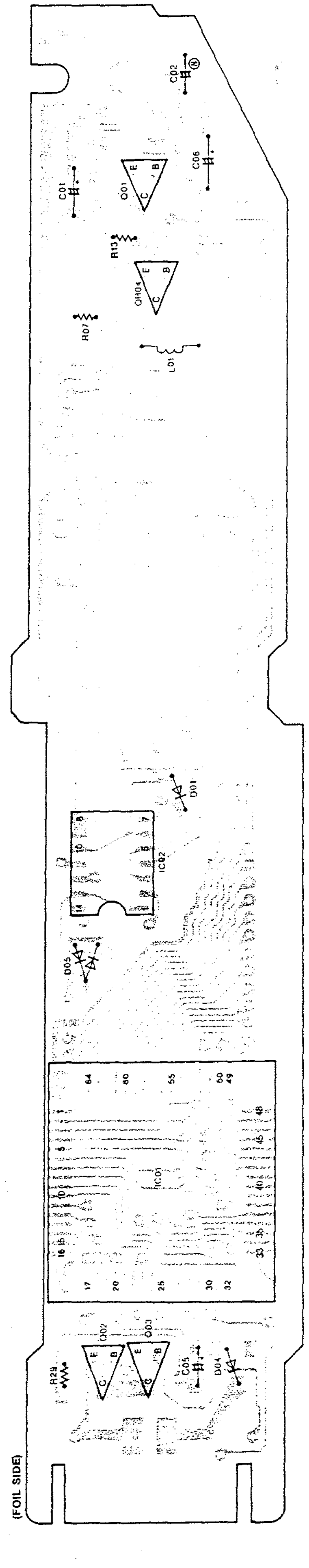
Schaltbild des Automatic Code Timers (Strichcode-Lesestift)
Automatic Code Timer Schematic Diagram


IC01
MN158453VPB
IC02
µPC324G2
IC03
RC78L02UAA
or NJM78L02UAA
LCD01
VSL0131·A.B
SU MO TU WE TH FR SA
PO·
M
D
ON
OFF
Q01
2SB710
Q02
2SB710
Q03
2SB709
Q05
2SB709
QR04
UN2210
D01
MA151WK
D04
MA151WK
D05
MA153
MA157
D06
LN66·S
(SE303ACY)
SN01
VSQ0567
VSQ0571
SENSOR
SW01
VSS0126
SW02
EVQQFV02K
X01
VSX0246
X02
EFBAL30D001K
L01
35m
VR09
300KB
BATTERY
1.5V×4
JA
JB
R01 56
R02 1K
R03 15K
R04 3300
R05 2K
R06 240K
R07 1600
R08 220K
R09 470K
R10 10M
R11 1M
R12 10M
R13 360
R14 6800
R15 3300
R16 6800
R17 6800
R18 12
R19 470K
R21 470K
R23 680
R24 1K
R29 15
47K
C01 16V47
C02 50V1
C03 0.1
C04 0.1
C05 50V1
C06 16V47
C07 33P
C08 33P
C09 0.01
C10 0.01
C11 0.01
C12 0.01
SEG0 SEG1 SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8 SEG9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32
COM0 COM1 COM2
VLCD1 VLCD2 VLCD3
VDD OSC1 OSC2 X0 X1 VSS RST
P00 P01 P02 P03 P10 P11 P12 P13 P20 P21 P22 P23 P30 P31 P32 P33 P42 PHO

Für Werte ohne Bezeichnung F (µF) oder Ω einsetzen.
Read F (µF) or Ω, respectively unless otherwise noted.

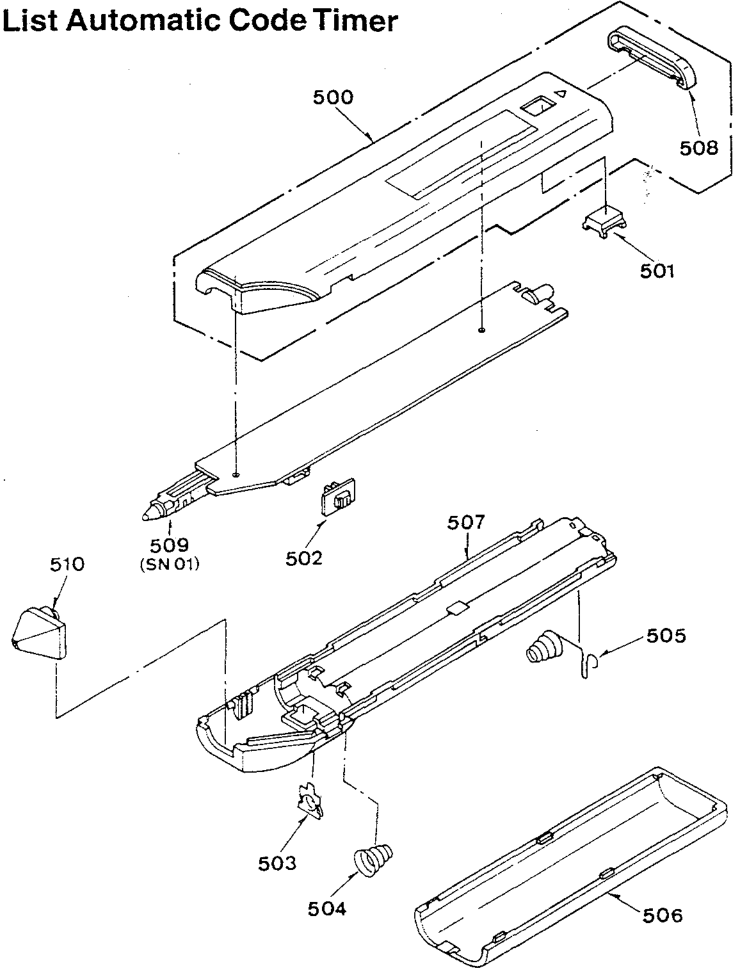
Platine des Automatic Code Timers (Strichcode-Lesestift)
Automatic Code Timer Circuit Board


(COMPONENT SIDE)
SENSOR
JE
Q05
E
B
C
R10
C08
C02
R01
R04
R03
C09
IC03
R06
R05
X01
R23
R24
C07
R15
SW01
VR09
C03
C04
R14
JB
JA
X02
R16
C12
C11
C10
R08
R12
R21
R19
R09
R11
LCD01
1
10
15
20
25
30
33
R17
R18
D06
SW02


(FOIL SIDE)
C02
C06
C01
Q01
E
B
C
R13
QH04
R07
L01
D01
IC02
D05
IC01
64
60
55
50
49
48
45
40
35
33
32
30
25
20
17
16
15
10
5
1
Q02
Q03
R29
C05
D04

COMPONENT SIDE = Bestückungsseite
FOIL SIDE = Lötseite

Explosionszeichnung und Ersatzteilliste Automatic Code Timer
Exploded View and Spare Parts List Automatic Code Timer



Lfd. Nr. Item no.	Bestell-Nr. Part no.
500	8 619 407 060
501	8 619 417 021
502	8 619 417 022
503	8 619 427 212
504	8 619 427 213
505	8 619 425 210
506	8 619 407 061
507	8 619 407 062
508	8 619 417 706
509	8 619 427 505
510	8 619 407 063

Ersatzteilliste

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.
	Strichcode-Lesestift-Platine Automatic Code Timer C.B.A.	
D 01, 04	MA 151 WK	8 945 405 317
D 05	MA 153	8 945 405 227
D 06	SE 303 ACY	8 945 405 860
IC 01	MN 158453 VPB	8 945 902 143
IC 02	µPC 324 G2	8 945 901 937
IC 03	RC 78 L 02 UAA	8 945 902 144
L 01		8 619 438 005
88:88		
LCD 01		8 619 487 502

Spare Parts List

Position Position	Bezeichnung Designation	Bestell-Nr. Part no.
Q 01, 02	2 SB 710	8 925 705 116
Q 03, 05	2 SB 709	8 925 820 033
QR 04	FA 1L 4Z	8 945 705 742
SW 01	POWER ON/OFF	8 619 424 208
SW 02	TRANSMITT ▶	8 619 427 215
VR 09	300 kΩ	8 941 599 501
X 01	VSX 0246-AT	8 946 193 193
X 01	VSX 0246	8 946 193 195
X 02	Signalgeber/Buzzer	8 619 427 506
	Strichcode-Lesestift/Automatic Code Timer	8619427504
	Tasche für Lesestift/Case for Code Timer	8619406005
	Programmiertabelle/Programming Sheet	8619419109